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ABSTRACT

This issue of working papers focuses on the relationship between the mind and language. Papers include the following: (1) "The Role of Language of Thought in Foreign Language Learning" (Andrew D. Cohen); (2) "UG Accessibility in Second Language Acquisition: Re-examining the Binding Parameter" (Howard Chen); (3) "Helping Philippe: Constructions of a Computer-Assisted Language Learning Environment" (Pedro Garcez); (4) ""Could You Calm Down More?" Requests and Korean ESL Learners" (Julie Kim); and (5) "Can Negotiation Provide a Context for Learning Syntax in a Second Language?" (Julian Linnell). (Each article contains references.) (NAV)

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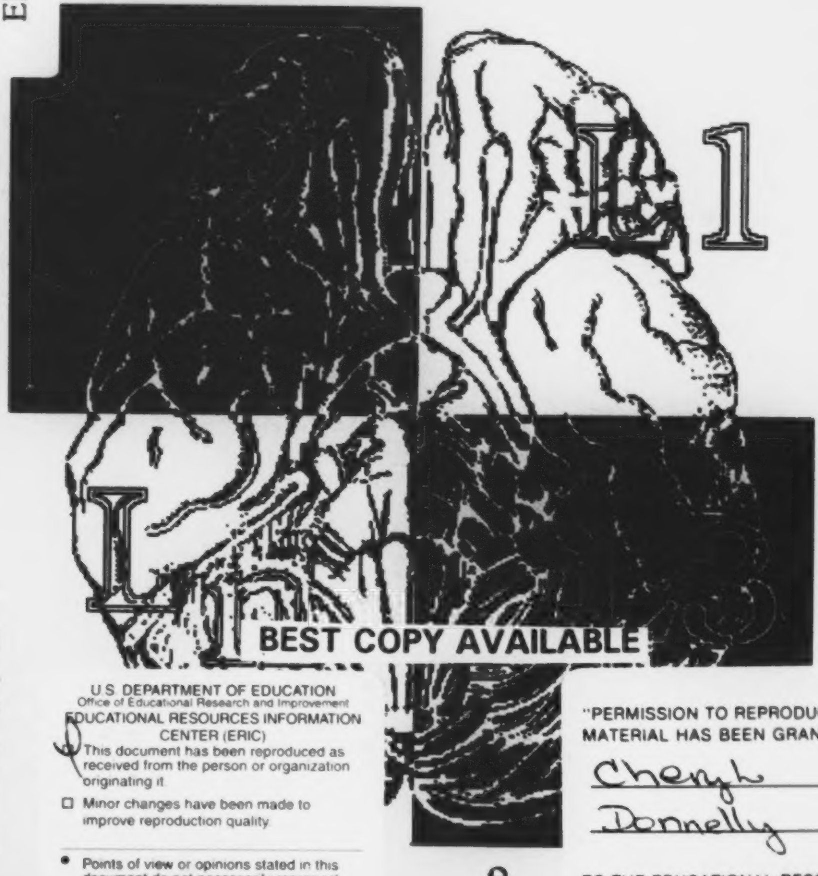

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From the Editor:

A renown linguist once attempted to address the mystery of the human mind by musing, "what is the mind but the brain at some abstract level?"[1] His question typifies the simplicity and the complexity found in any discussion on this subject. In other words, linguists now seem to presuppose the existence of the mind, and yet we are unable to describe its location, composition, and functioning. In this issue, we are pleased to feature further work on the relationship between the mind and language. In the lead article, Andrew Cohen explores the connection between thought and language by examining self-reports from language learners in a foreign language context.

As always, we are proud to offer an eclectic mix of the most recent work in educational linguistics. Also in this issue:

> Howard Chen, in a survey of the most recent work on UG and language acquisition, reevaluates the role of the Binding Parameter in second-language learning.
>
> Pedro Garcez takes a critical look at one of the most popular CALL programs: *A la recontre de Philippe*.
>
> Julie Kim uses the DCT to elicit requests from adult Korean ESL learners and the results for indications of pragmatic transfer.
>
> Julian Linnell continues recent work on negotiation by focusing on the relationship between interaction and syntacticization.

We would like to encourage submission to our special fall issue on quantitative and qualitative research methods. For this issue, preference will be given to studies or surveys that highlight the strength of any particular method or that attempt to integrate the two approaches.

The editorial board would also like to thank the following individuals whose support made this publication possible: Dean Susan Fuhrman, Keith Watanabe, Lorraine Hightower, Frank Kodman, and Lawrence Warner.

Leslie K. Nabors
Editor-in-Chief

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[1] Noam Chomsky, in Searchinger, G. (Producer). (1995). *The Human Language Series*, Washington DC: PBS.

The Role of Language of Thought in Foreign Language Learning[1]

Andrew D. Cohen

University of Minnesota

Methods of foreign language teaching and learning are often predicated on the principle that learners need to think as much as possible in a language that they wish to learn. This paper first explores what it means to think in a target language. Next, those factors which determine both unplanned and planned use of more than one language for thinking are discussed, and empirical data from a mini-survey and from the author's own language learning and language using experiences are presented. Thirdly, the paper considers the role of target-language thinking in improving language ability, again drawing on empirical data from the survey and from the author's experiences. Finally, we will look at mental translation in the reading of intermediate college French, the language of thought in an elementary-school Spanish immersion program, and thought patterns in the production of speech acts by college EFL students. After reviewing the responses from the mini-survey of multilinguals, from the author's own experiences, and from additional empirical studies, the conclusion reached is that there are definite benefits from making an effort to think through the target language. It is suggested that further research may ultimately produce a set of guidelines for learners as to the advantages and disadvantages of thinking through the native language while performing target language tasks.

Is it beneficial for learners to attempt to think as much as possible in a language that they wish to learn or to improve their mastery of? Might it be detrimental to their learning if they limit their use of that language as a vehicle for thought? This issue has not been expressed as a set of research questions until recently, and the intuitively-based assumption has been that the more thinking through the target language, the better. There is evidence from research on foreign-language reading, however, that translation into the native language may play a positive role for some, if not many, language learners in the retention and comprehension of written texts (Kern 1994; to be discussed below). Under what circumstances might the more successful language learners think extensively or exclusively in the target language that they are using? While multilinguals may actually have differential strengths in their various languages, according to discourse domain (Selinker & Douglas 1985), the extent to which they use these languages for solving cognitive tasks has remained a relatively unexplored phenomenon.

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[1] Paper presented at the 4th Annual Nessa Wolfson Memorial Colloquium, University of Pennsylvania, Jan. 30, 1995. An earlier version of the paper was presented at the Second Haifa Trilingual Conference, June 12-13, 1994. I wish to acknowledge Jim Lantolf, Dick Tucker, Elaine Tarone, Rick Kern, Merrill Swain, Rebecca Oxford, Barry McLaughlin, Vivian Cook, and Bert Weltens for their helpful suggestions on various drafts of this paper.

This paper will: (a) explore what it means to think in a target language (LT), (b) look at results from a mini-survey and from the author's self-examination regarding unplanned and planned use of more than one language for thinking, (c) consider the same empirical data regarding the role of LT thinking in improving language ability, and (d) examine additional empirical findings regarding multilingual thought patterns and the implications of these findings with regard to foreign-language teaching and research.

What it Means to Think in a Target Language

Many language educators would maintain that the best way for learners to achieve native-like control of an LT is to make an effort to think in that language rather to translate or reprocess the material into their first language (the L1) or into some other language which they have learned (the LO). Is this folk wisdom that we need to liberate ourselves from or is it sound advice? This issue will be explored in the paper.

First of all, what does it mean to "think in a target language"? For the purposes of this paper we will concern ourselves only with verbalized thoughts (whether silently, subvocally, or aloud) and not with non-verbal thoughts (images, symbols, etc.). The extent and nature of LT thinking can vary from minimal, passing thoughts (e.g., just a word or two) to more extensive and "deeper" (i.e., more cognitively complex) ones, depending both on the nature and quality of the language learning environment (e.g., an L2 vs. an FL learning situation), and on the degree to which the learner has mastery over the LT. Since there appears to be little or no systematic research in this area, we can only speculate as to the extent to which non-natives' thoughts are in the LT and the effectiveness of "thinking in the LT" as opposed to thinking in the L1[2]

Unless we are thinking out loud, our thoughts reflect inner speech--that is, the thinking we do in our minds that is in the form of words rather than images or symbols. This inner speech could be both self-directed or private in the Vygotskian sense (i.e., not intended for others and perhaps difficult to interpret because it is incomplete in grammatical form and vocabulary but adequate for the thinker) or other-directed or public (i.e., interpretable by others) (Vygotsky 1961). In order for inner speech to take place in an LT, learners may need to attain a certain functional level with regard to vocabulary and structure. Some areas of thought may be more demanding than others for given learners.

An empirical question is one of threshold: how well do learners need to function in a language in order to think in that language? But since thinking in a language involves different levels or depths of meaning, the answer to the question is complex. We cannot, for example, assume that greater proficiency in a language enhances the possibility that thinking will occur in that language. There need not be a necessary link here since proficiency is probably not a unitary construct in the first place.

It is also reasonable to assume that thinking through the LT is more likely in a discourse domain over which the learner has greater control. It has been hypothesized in the literature that learners create their own highly personal discourse domains (Selinker & Douglas 1985). These domains are "internally-created contexts, within which...interlanguage structures are created differentially" (p. 190). Selinker and Douglas (1985) gave the example of a discourse domain in civil engineering created by a native Spanish-speaking graduate student. They demonstrated in their research how nonnatives may be more conversant in talking about content in certain discourse domains than in others. There is also research which shows that even nonnatives with limited language proficiency may still be more conversant in talking about content within their professional discourse domain than less knowledgeable native speakers (Zuengler 1993).

Another way to characterize thoughts might be through distinguishing those of an academic nature from those of an interpersonal or social nature, consistent with the distinction between academic and conversational language proficiency made by Cummins (1991). If learners wanted to use the LT to think through a word problem in math or refine the research questions for a study, then they would need to call on their academic language proficiency in the LT in order to do so. Likewise, if they wanted to think LT thoughts of a sociocultural nature, possibly even emotionally charged ones (e.g., planning a complex speech act, such as complaining, apologizing, or making a delicate request; or relating an emotional upset to a close friend), then the learners would need the appropriate conversational language proficiency in the LT.

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[2] The possibility is raised that so-called LT thinking may actually consist of little more than "relexified" L1–that is, with LT words replacing L1 words in L1 structures (Jim Lantolf, Personal Communication, May 13, 1994). This is an extreme position. In actuality, the interlanguage reflected by a nonnative's LT thoughts is mediated by experiences, by ethnolinguistic background, by gender, and by the discourse domain. Given that most nonnative users of a language lack full mastery in their productive skills (speaking and writing), it is likely that their LT thoughts will be transmitted though an interlanguage as well. An empirical question would be whether the fact that the LT thoughts are conveyed through an interlanguage might have a deleterious effect on the thoughts themselves.

In certain language contexts, such as that of the workplace, both non-native learners and bilinguals who have the LT as one of their languages, may only be able to perform work-related cognitive operations in that LT (e.g., in scrutinizing the language of a legal document or of a patient's medical record, in negotiating an auto repair, or in functioning successfully in an academic discipline such as psycholinguistics). They may not know how to think about work-related issues in their L1 if their only exposure to the material (e.g., through schooling and/or through a work experience) is in the LT, and if, in addition, they have done little or no reprocessing of this LT material into the L1 or another language. In other domains, such as that of social interaction, the language of thought in social interaction may be the L1 or an LO in which the speaker feels more comfortable. Hence, we could consider this a case of diglossic thinking where the speaker has the capability of thinking in two or more languages and uses these languages for distinctive and largely complementary purposes.[3]

Recently, a sociolinguistic survey was conducted to determine what was referred to as "the internal functions" of language for 59 bilingual students and teachers (23 Francophone Africans, 12 Finns, and 24 from other language backgrounds; ages 18-35), who all functioned at a high level in two languages (Cook 1994). The concern that prompted the survey was to improve upon definitions of bilingualism which do not typically take into account internal or *private* functions of the two languages, such as self-organization (e.g., making appointments and shopping lists), mental calculations (e.g., counting things and adding up numbers), memory tasks (e.g., remembering phone numbers, travel routes, days of the week, and historical dates), unconscious uses (e.g., talking to oneself and dreaming), praying, and display of emotions (e.g., feeling happy, sad, tired, pained, or frustrated).

The results showed prayer to be the activity that drew the largest concentration of reported L1 use—60% (with 20% indicating use of both languages and 20% use of just the L2). The next highest reported use of L1, 55%, was for mental calculations, while 17% reported using both L1 and L2, and 28% reported using just the L2. Unconscious uses was next with 49% of the L1, 38% of both L1 and L2, and 13% use of the L2. For memory tasks, 48% reported using the L1, 23% reported using both languages, and 29% indicated use of the L2. Finally, 44% of the respondents indicated displaying their emotions primarily in their L1, 39% in both, and 17% in their L1. This study constitutes one of the only attempts to determine the extent to which bilinguals use their two languages for such private functions. It also needs to be pointed out that the results of such a survey will vary according to the demographics of the given sample.

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[3] The phrase *diglossic thinking* is derived from the notion of diglossia wherein there are two co-existing languages or language varieties in a community, each with its own purposes (Ferguson 1959).

While this survey gives a broad report of the language of thought for selected activities, there is a need for more such surveys along with the details of actual experiences. For example, the survey would suggest that about half of those sampled preferred to think emotionally-charged thoughts in their L1. Ten years of participation in a support group in Israel provided me with some insights that would corroborate this finding. The support group averaged ten members, of whom some four were native speakers of Hebrew and six were native speakers of English, although all were fluent in both languages. In situations where there was a need to communicate on highly sensitive, emotional matters, the participants appeared to be thinking about issues primarily in their L1[4] and almost invariably communicated their thoughts in the L1.

Although probably less common, there may also arise instances where nonnative speakers may wish to distance themselves from their message by thinking and talking about it in the LT precisely so that it does not have the same emotional impact. A colleague related to me that while a college student of German used English when she thought to herself about her having been a rape victim, she was only willing to share the details of this ordeal with others in the foreign language, German. Presumably, some, if not many, of her thoughts about this traumatic experience were in German, at least at the point when she externalized them for her listeners. Hence, she was distancing herself from the event.

* * *

In an effort to explore the factors influencing language of thought and the role of LT thinking in improving language ability, two methods of data gathering were employed. First, a short questionnaire was constructed (see Appendix) and disseminated in December of 1993 to graduate students in a University of Minnesota second-language teaching methods course and to ESL teachers at the Minnesota English Center. Completed questionnaires were obtained from seventeen anonymous respondents, of whom thirteen were English native speakers, two were native speakers of Japanese, one a native Turkish speaker, and one a native Hungarian speaker. While three of these were bilingual, all the others were multilingual--eight being trilingual, four quadrilingual,[5] one quintilingual, and one sextilingual.

Second, since it was largely through my experiences in studying twelve languages and continuing to use seven of them that prompted this paper, I decided to draw on some of my own multilingual thinking experiences as a source of data. I lived for sixteen years in a Hebrew- and Arabic- speaking community, two years in an Aymara-speaking community within the

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[4] This observation was not empirically verified however, such as through retrospective verbal report.

[5] One of whom had studied four other languages as well.

Spanish-speaking world, a year and a half in a Portuguese-speaking country, and four months in a French-speaking environment.

The following discussion of language of thought and the contribution of LT thinking to language learning will draw on selected responses from the mini-survey and from the experiences of the author.

Factors Influencing Language of Thought

There would appear to be a number of factors which determine which language(s) people think in at a given moment. Some of these are accidental while others are more planned. Let us now look at both unplanned and planned uses of languages for thought.

Unplanned Uses of Language(s) for Thought

Learners may find themselves thinking in a language and actually be surprised by this realization. Sometimes the switch is triggered by a memory about people or situations, as two respondents indicated:

> English-L1 trilingual: Sometimes when something triggers a memory of being abroad where I spoke an L2 (i.e., Guatemala, Poland, etc.), I think in the language I used at the time, especially if the memory involves conversations or encounters with native speakers in those places.

> English-L1 quadrilingual: I think in Hebrew, French, or German when I'm thinking about people who speak those languages or situations in which I used those languages.

Another unintentional switch takes place when speakers want to speak in the L3 but thoughts come to them in their L2, a language in which they are more proficient:

> Hungarian-L1 trilingual: It often happens to me when I try to speak in my L3 [German] that I find myself thinking in my L2 [English]--as if my brain knew that it should be a foreign language, but words come to me in the foreign language that I'm more proficient in.

One of the respondents from the survey, an English-L1 trilingual, described a somewhat frustrating but not atypical experience in multilingual thought in a language class he once took:

> I studied Spanish in Sweden as an exchange student. A question would be posed in Swedish with the goal of a reply in Spanish, but in my head it went Swedish English Swedish, as if I were speaking "foreign"--that is, any language other than English was "foreign." It was very confusing for the instructor, and I often wouldn't know which language I had produced in.

The above respondent was thus describing a recurring situation in which he was reprocessing the teacher's Swedish-L2 input into English-L1 and then instead of responding in Spanish-L3 as he wished, the thoughts and subsequent utterances would sometimes emerge in Swedish, almost involuntarily. In other words, his mind would go into a "foreign language" mode and what would appear would be the dominant foreign language rather than the target one.

The English-L1 sextilingual indicated shifts back to the L1 from a second or foreign language because of language inadequacy, as well as noting a fascinating pattern of repeatedly shifting to the L6 in dreams:

> I often have thoughts that begin in a second language but end in my L1 because of language inadequacy. I also have thoughts that begin in a second language and switch to L1 when I remember that I can use the L1 for the interaction I am anticipating. I'm used to living in a non-English environment. I have had dreams where I am attempting to talk to someone in my L3 but keep lapsing into my L6.

When my wife, two children (ages 13 and 9), and I lived in São Paulo, Brazil, from 1986 to 1987, English was the language of the family at home, Hebrew the family language on the streets (for security reasons), and Portuguese the language that I used at work in the university. It was not a strictly triglossic situation in that while conducting classes and meeting with students in Portuguese, I continued to use English at work for my own research purposes. Also, we would use Portuguese on the streets with Brazilian friends and sometimes used English as well. Given this multilingual environment, I noticed that I would inadvertently have trilingual thoughts--beginning them, say, in Portuguese, continuing them in Hebrew, and ending them in English. When I would become aware of this, it would usually amuse me. I remember attributing that phenomenon to the fact that I was using all three languages frequently and in highly contiguous situations, but I never analyzed just where the shift took place (i.e., if there was some trigger word or phrase [Clyne 1980] that induced it).

Planned Choice of Language(s) of Thought

Whereas multilinguals may well find themselves thinking in a given language without having consciously chosen to do so, at other times language learners may purposely use the LT as the language of thought. While the learner may not be able to control the language in which some of their thoughts appear, they may still be able to plan their thinking in the language on numerous occasions. Let us look at some of these planned choices.

Warm up: "Din in the Head"

A language learner may choose to think in an LT for the purpose of rehearsal--to warm up or to enhance the "din in the head" (Krashen 1985) for that language. Here is an example from the mini-survey:

> English-L1 trilingual: Yes–I planned what I would say and prepared for various scenarios ahead of time in a language—thinking of what words I would use and how to express myself in a situation. It was very helpful and after a few months, I gave it up because I no longer needed to rehearse.

Depending on how well the language is known, carrying on an imaginary conversation in the mind or planning for such a conversation may contribute to more successful oral communication. By the same token, reading bits and pieces of a newspaper in the target language or doing a little unmonitored speed writing may constitute useful warm ups to subsequent reading and writing efforts respectively. The amount of time needed for a warm up will vary according to the learners' proficiency in that language and the recency of last contact with it.

Thinking through the L1 or an LO in Learning the LT

Learners may think in their L1 or an LO (see the examples from the trilingual and the sextilingual below) in order to learn some formal rule of grammar in the LT. In fact, they may only attempt to think in the LT itself when the intent is to use the language in free conversation, and perform all metalinguistic tasks in the L1. Probably any such depiction of reality would be problematic since humans do not categorize their behavior so neatly. Rather, some of a learner's metalinguistic thoughts would be through the LT, depending on the learners and the type of task (e.g., when formal learning takes place in the LT), and many of their thoughts during language use would be through their L1. Learners may not, however, think complex (e.g., metalinguistic) thoughts through the LT at all, but rather may make passing reference to the LT in the form of fleeting or limited thoughts. So, the question is whether the LT actually serves as a language of thought or as a language of reference (Richard Kern, personal communication, January 12, 1994). So, this brings us back to the question raised at the outset concerning what constitutes "thinking in the LT."

Multilingual learners may also consciously draw material from several LOs while learning an LT. For example, in devising mnemonic devices for remembering LT words, learners may choose to use words or expressions from an LO. So, for example, when I was learning Hebrew, I usually generated mnemonic keywords from English but occasionally from Spanish. Thus, when I wanted to remember the Hebrew word **arbolet** 'whirlpool,' I used the Spanish keyword **árbol**, and created an image of a dead tree caught in a whirlpool.

Likewise, multilingual language learners may choose to think at times or even extensively in one of their LOs while learning the given LT. This LO may be closer to the target language in structure and vocabulary than is the L1. Again using myself as an example, as a native speaker of English, I learned L4 (Spanish) by thinking primarily in my L3 (French); I learned my L5 (Aymara), L6 (Portuguese), and L11 (Italian) by thinking extensively in my L4 (Spanish); and I learned my L8 (spoken Arabic) by thinking most of the time in my L7 (Hebrew). When I speak these languages I often still think—at least to some extent—in the language that I used as a language of thought during the learning process.

In learning spoken Arabic, I was in a class with Hebrew speakers and the vocabulary was glossed in Hebrew. The system for writing the spoken Arabic involved the use of a transliteration using Hebrew letters (written from right to left). When I speak Arabic today, I think partly in Hebrew (as Arabic and Hebrew share common words and grammatical structures) and partly in English. Interestingly enough, I call up an English transliteration (from left to right) in my mind even though I learned through Hebrew transliteration. The mnemonics that I used to learn Arabic vocabulary mostly involved both English and Hebrew key words and phrases (e.g., English mnemonic keyword for the Arabic word **ebtihan** 'exam' "empty handed"—"he went into the exam empty handed").

With regard to the experiences of the seventeen respondents surveyed, none indicated that they used a global strategy of thinking through an LO, as I had done systematically in the learning of five languages. However, several indicated the use of the LO in the learning of LT grammatical structures:

> Turkish-L1 trilingual: The grammar of my L3 (English) is more similar to my L2 (German) than my L1 (Turkish). When I was learning English I was comparing it to German rather than to Turkish.
>
> English-L1 sextilingual: I guess when I learned Spanish I compared verb conjugations to French, which I had studied previously, because person, tense, and gender matched better than comparing to English.
>
> English-L1 quadrilingual: When I studied Russian and Farsi, I relied on my knowledge of the verb conjugation paradigms from the Romance languages I had studied. I found many phonological similarities which helped me to remember subject pronouns and verb endings. My knowledge of German helped me be more open to the concept of the case systems in Russian.

One respondent did indicate frequent interlingual comparisons for the purpose of practicing the different languages:

> English-L1 quadrilingual: I do this all the time, for the purpose of practicing my other languages. I'll take an English thought, and ask myself, "How would I say this in Spanish, or Ukrainian?" Then, additionally, I might ask myself, "Which language seems to express that idea, or that thought, or feeling the best?"

The Role of LT Thinking in Improving Language Ability

While researchers in the field of language learning have begun to investigate the strategies that learners use to succeed at LT learning (O'Malley & Chamot 1990, Cohen 1990), the issue of the language of thought has not received much attention in the language learning strategy literature. As mentioned at the outset, there is an intuitively-based assumption that it is beneficial for foreign language learners to think as much as possible through the language that they are learning. This assumption has been at the core of certain foreign language learning methods that have avoided the use of the learner's L1, at least during the initial phase of instruction--methods such as the Silent Way, Total Physical Response, and the Natural Approach.

With regard to the Silent Way, Gattegno expressed his position as follows:

> Throughout our oral work with the rods and the visual dictation on the charts, we have carefully avoided the use of the students' native languages. We have even succeeded in blocking them so that the students relate to the new language directly. . . (Gattegno 1976, p. 99)

Asher (1977) described his Total Physical Response method as follows:

> Understanding should be developed through movements of the student's body. (p. 4)
>
> When you cast material in the imperative, there is no translation. (p. 20)

Krashen and Terrell (1983) stipulated the following with regard to the Natural Approach:

> (1) the instructor always uses the target language, (2) the focus of the communication will be on a topic of interest for the student, (3) the instructor will strive at all times to help the student understand. (p. 20)

In methods such as these three, teachers implicitly or explicitly discourage students from translating, and the learners themselves may come to feel that L1 or LO thinking could be detrimental to the learning process. The argument is that by thinking in the target language, learners are increasing their chances of becoming idiomatically accurate in that language—that they are more likely to stop and ask themselves, "Now how would a native say or write that utterance?" The assumption behind the "don't translate" philosophy is that it will lead to greater success at language learning.

The University of Minnesota mini-survey on the language of thought asked students whether they were admonished by their teachers to think through the LT in their language learning experiences. Fifty percent of the respondents in the mini-survey indicated that they were:

> English-L1 trilingual: I was taught early on to do this--at first it took more conscious effort, but now it sometimes "just happens."
>
> English-L1 trilingual: The teachers always encouraged us to stop translating and start thinking in the L2.
>
> Chinese-L1 bilingual: She pushed to think in the L2. I remember feeling saturated by all of the pushing she did in the L2.
>
> Turkish-L1 trilingual: Often. My first German teacher encouraged us to think in German and to avoid translating into our native languages.
>
> Japanese-L1 trilingual: I went to a school of English in Japan, where English was the only means of communication. "Think in English" was the school's motto or philosophy.
>
> Hungarian-L1 trilingual: I have always been encouraged to try to think in the foreign language I'm learning, but I've found that it's much easier to do at a higher proficiency level than at lower levels.

When asked whether they themselves made an effort to think extensively through the target language, 82% (14) indicated that they did. As to the results it produced, most indicated benefits. The first set of responses referred directly to situations of submersion in a context where the language was spoken natively:

> English-L1 trilingual: Living over there [in France] for 4+ years with few "English" contacts made that quite easy.
>
> English-L1 bilingual: Yes--I consciously pushed myself to think in my L2 while I lived in China. The results were quite good, especially since I did a lot of communicating with other L2 learners in Chinese. The more we practiced the language and thinking in the language, the better our communicative competence and linguistic competence.
>
> English-L1 trilingual: Yes, [the results of submersion were] pretty successful. After a year of living in Mexico, I seldom had to think of a word in English before putting my thoughts into Spanish.
>
> English-L1 quadrilingual: During a time living in France I took a course in speed-reading. Since what I was reading was French, I eventually got to the point where I really read in French--despite lack of oral practice. I continue to read French fast and always in French.

> Japanese-L1 bilingual: I tried to think in English when I was studying the language in Japan. But it just didn't work. (I can do it quite easily now [after coming to the U.S. to study].) I think one needs to immerse in the LT culture for some time before she becomes able to think in the LT.

> Turkish-L1 trilingual [living in the U.S. for some years]: Not as much in German [L2]. I seldom think in Turkish now. I am much more at home in English [L3] than I ever was in German.

The next set of responses regarding the extent of LT thought are of a more general nature, not referring specifically to submersion in the language and culture:

> English-L1 trilingual: I find that when I do make the effort to make internal dialogue in L2, it makes it easier to speak without as much hesitation.

> English-L1 quadrilingual: Always--I am successful. I talk to myself in LTs, describing even simple things.

> English-L1 quintilingual: It seems to aid reading comprehension and oral communication when I try to think in the LT system.

> English-L1 quadrilingual: The first year I studied Spanish, I practiced translating my thoughts from English to Spanish all the time--at work, play, walking around, etc. I believe it served to ingrain my knowledge immensely. I considered it "studying any time, any place, without even sitting down and opening my book."

> English-L1 sextilingual: Yes. My language ability improved. I communicated more and better. I began to automatically think in the second language and to rehearse mentally what to say in various situations I encountered or anticipated.

> English-L1 trilingual: Yes, I can exist in Swedish--and I do not know many telephone numbers of my Swedish friends in English. I have to write them out and translate if I give them, for example, to an international operator.

> English-L1 trilingual: If you can do it, it always pays off.

Only two of the respondents had a somewhat negative response to the question about whether they used LT thought extensively:

> Japanese-L1 trilingual: Yes, but I guess that I tended to get exhausted at a particular point in the process of thinking. Also I seemed to be thinking more slowly. (Thus, I was more frustrated.)

> English-L1 bilingual: Not usually, unless I'm also speaking or reading in German.

So, the conclusion that one might reach after reviewing the responses from the mini-survey and from my own examples is that there are definite benefits from making an effort to think in the LT. The issue at hand is what such "thinking in the LT" really means and how to do it most effectively. Just as Kern questions the extent to which the LT is actually a language of thought as opposed to a language of reference, so Lantolf (personal communication, May 13, 1994) contends that when nonnatives plan and rehearse what they want to say subvocally in an LT (as some of the respondents reported doing above), this does not really constitute thinking in the LT; likewise, Lantolf sees this activity more as thinking about the LT. In other words, the fact that the speakers have to engage in such activity might suggest that they cannot think in the LT. Of course, if they are rehearsing the LT material and also thinking about it in the LT at the same time, then perhaps this would more directly constitute thinking in the LT.

Once we have all of these various distinctions sorted out and arrive at a good working definition of what we mean by thinking through the LT, then it will be beneficial to conduct a series of studies assessing the effects of both qualitative and quantitative differences in the amount of LT thought on outcomes at various stages in the learning process.

Additional Empirical Data on the Language of Thought

A Study of Mental Translation in Reading

As noted at the outset, Kern (1994) has recently conducted empirical research which provides new insights into the language of thought for comprehending foreign language texts. The researcher explored the actual uses for translation into the L1 in the language learning/using process. He had 51 students of intermediate-level college French (in high, medium, and low reading ability groups) participate in verbal report interviews while reading French texts at the beginning and the end of a fifteen-week semester. An analysis of the verbal report data provided a series of reasons for why the learners of French as a foreign language chose to perform mental translation into their L1, English. The study provided a number of insights as to why LT learners may well choose to think through their L1 or an LO instead:

1. By so doing, the learners have an easier time processing the thought since L1 or LO processing facilitates semantic processing. For example, learners may have a more difficult time chunking LT lexical items into semantic clusters than they do with translated items. If the learners stay only in the LT, they are more likely to store words as discrete units in working memory, which in turn places a greater burden on memory capacity.

2. If learners process the input exclusively in the LT, they run the risk of losing their train of thought as soon as the chunks are long or syntactically complex, since such chunks are harder to hold in short-term memory. Indulging in mental translation during LT aural comprehension or reading, on the other hand, is likely to allow the learner to represent in a familiar, memory-efficient form, portions of the oral or written LT text that exceed cognitive limits. Translation then serves as a means of maintaining concentration long enough for meaning to be integrated and assimilated.

3. By thinking in the L1 or an LO, the concepts are likely to come alive because the learners' network of associations is usually richer than in the target language. The semantic potency of words may simply be less in the LT than in the L1 or an LO.

4. Thinking in the L1 or an LO converts the input into more familiar, user-friendly terms, enhancing the learners' confidence about their ability to comprehend it. This may serve as an affective boost, reducing the insecurity they may feel.

5. Learners may also revert to the L1 or an LO because they have found that it helps them in clarifying syntactic roles, verifying a verb tense, or checking for comprehension (Kern, 1994).

The fact that learners resort somewhat or extensively to the use of the L1 or an LO does not necessarily mean that translation works to the learner's advantage. For example:

1. Attempts at translation may be inaccurate, leading to miscomprehension.

2. Translations done too much on a word-by-word basis at the micro-level may not adequately provide for integration of meaning. Hence, the learner may come away with a bottom-up sense of how portions of text and isolated items function and what they mean, without having an overall, top-down sense of what the material is all about.

3. Learners who are translating during language processing may be attending to LT forms only very briefly and reserving the bulk of meaning processing for the L1 mental representation. In other words, it is possible that during much of the meaning-integration process, learners focus primarily on transformed L1 representations rather than on the original LT forms. Furthermore, some or much of the thought that goes on during mental translation may be of a technical or perfunctory nature--e.g., searching for literal equivalents of LT forms, rather than determining the general coherence of the text. In an extreme case, the LT input may make little impact on the learners' knowledge of the LT forms. It is more likely that while such a language comprehension strategy would diminish the likelihood of LT learning, some learning would nonetheless take place.

Studies of L2 Writing by Means of Translation

While Kern's study focused on mental translation for the purpose of comprehending text during reading, studies have also begun to look at the effects of translation from L1 on the production of foreign language writing. A study by Paivio and Lambert (1981), for example, found that the translation of individual words called for deeper language processing than simply copying down the foreign language synonymous word or phrase, and that this act of translation helped to fix the words more solidly in long-term memory.

At the text level, a study of EFL composition writing was conducted with 48 Japanese university students who were at the low-intermediate to low-advanced levels and who had all had four years of university

(Kobayashi & Rinnert 1992). Choosing from among four topics, one group wrote the first essay in Japanese L1 and then translated into the foreign language, English, while a second group wrote directly in English first. The next day the groups reversed tasks and wrote their second essay on another topic.

The results showed that the translations were rated higher (in content and style) than were the essays written directly in English, the foreign language. In terms of content, organization, and style, lower-level writers benefited from translation whereas higher-level writers did not. Syntactic complexity was found to be greater in the translations. When the students were asked for their writing preference, 77% reported preferring direct composition to translation. They based their view on the difficulty of conveying subtle nuances of meaning when translating, and on the tendency to use familiar words and structures and simpler ideas when writing directly. In addition, several indicated preferring the direct approach because they wanted to think in English.

As for the advantages of translating, ideas were easier to develop, thoughts and opinions could be expressed more clearly, and words could be more easily found through the use of a dictionary. The students reported being able to think more deeply in their native language and better express their thoughts and opinions. Translating was also viewed by some as helping in vocabulary acquisition.

The investigators asked for retrospective self-reports from the students as to "how much Japanese they thought they were using in their minds while they were writing directly in English." Since 55% of the higher-proficiency students and 87% of the lower-proficiency students reported using Japanese half the time or more when supposedly writing directly in English, the *direct writing* treatment was actually somewhat less direct than the label would imply.

Another study of foreign language writing through translation was conducted by Brooks (1993). She compared two methods of producing French compositions among intermediate college French students: writing and revising a draft in English and then translating the finished version into French vs. conducting the entire process in French. She found that out of 31 students, seventeen were rated better on their translated essay than on the one they wrote directly in French. Twelve students received a higher rating for the essay that they wrote directly in French, and two had identical scores. In this study, the students were not asked to report on the extent to which they thought in the L1 while composing directly in the foreign language, French.

Studies such as these two, by Kobayashi and Rinnert (1992) and by Brooks (1993), would lead to speculation that for a percentage of intermediate nonnative writers, writing directly may actually constitute a lowering of a standard that can be set by writing first in the native language and then translating. Contrary to popular belief, the attempt to think directly through the LT may actually detract from the production of good writing. If so, this would be an indication of a way in which thinking in the L1 can actually support the production of foreign language despite the admonition that such cognitive behavior encourages negative transfer and is thus counter-productive.

An Anecdote from the Culver City Spanish Immersion Program

Immersion programs pride themselves on producing a more natural, enduring form of bilingualism than do more limited programs which simply teach foreign languages as a subject (e.g., FLES). The Culver City Spanish Immersion Program--the first full-immersion program in the U.S.--represents one of the most conscientious efforts to stick strictly to the target language for academic subjects and for social interaction over the early grades. During the first decade or two of the program, the teachers made it a point of sticking to their foreign-language guise and never spoke English. They even pretended not to be able to, although they made it clear that they understood all that was said by students in English.

I recently had an opportunity to spend extended time with one of the students in the first class to go through the Culver City Spanish Immersion Program (starting kindergarten in 1971), and to speak Spanish with her. The information that she shared with me and actual insights from her efforts at using Spanish during that meeting underscored for me the need to conduct systematic research regarding the language of thought in such programs. After several years in France and no continued use of Spanish, the former immersion student's Spanish was "rusty." She understood most everything but spoke it only haltingly. What was interesting was that she spoke it with a near-native accent and that she reported thinking directly in Spanish when she spoke it.

When she wanted to order a turkey sandwich in Spanish at a Subway restaurant (the attendant was Mexican-American), she could not remember **pavo** "turkey," but instead of thinking, "How do you say turkey in Spanish?" she thought, "**No es 'pollo.' ¿Cómo se dice?**" ("It's not 'chicken.' How do you say it?") In other words, her thoughts were in a Spanish inner speech. She reported that when she spoke in French after having lived in France for several years, she would often think in English first. As she put it, "'Glass' is **verre**, while in Spanish the word **vaso** just comes right out directly."

While the former immersion student was confident that her early start with Spanish made it easier for her to learn French and to learn it well, in some ways she did not and perhaps could not learn French as "deeply" as she had learned Spanish. Thus, it appears that Spanish had special status in her mind, although considerable language attrition had taken place. Cognitive psychologists have long maintained that the durability of memory traces depends on the depth of processing, or the degree of analysis afforded the material in question during the various moments or stages in the input process (Craik & Lockhart 1972, Craik 1977). It would seem that getting an early start on language acquisition through early full immersion and participating in such a program that is rich in repeated exposures to the language would help to enhance or deepen the learning.

It may be of benefit to follow up on this anecdote by determining whether this "deep processing" phenomenon is shared by other immersion students who later became fluent in another language. If so, then perhaps it says something about the quality of the language learning experience in early immersion.

Findings from a Recent Study of Spanish Immersion Learners

While it is often presumed that immersion program pupils come to think through the target language while performing school tasks, the learners may actually be thinking largely through their native language or another language. For example, a study was conducted with 32 Spanish immersion pupils selected from third through sixth grade at a full-immersion school in St. Paul. A team of five investigators collected verbal report and observational data from the pupils over a five-month period (Cohen 1994; Parker, Heitzman, Fjerstad, Babbs, & Cohen in press; Heitzman 1994).

The study was designed to examine the nature of the internal language environment that emerges in learners as a result of the specific external language environment established in immersion classrooms. *External language environment* was defined as all language-related elements that influenced the learner from without, namely, curriculum goals, classroom policies and procedures, classroom materials and activities, and communicative exchanges between students, teachers, and administrators. The *internal language environment* referred to how learners processed language in their minds--that is, their native- and second-language systems and the role played by each in performing the cognitive tasks for which the second language was a vehicle.

The findings revealed that for the immersion students under study English seemed at times to play a more prominent role in their internal language environment than did Spanish. In responding to both numerical and verbal problems in math, students reported favoring English in their cognitive processing and were also observed to be doing so. They read the problem in Spanish but would shift to English immediately or as soon as they had some conceptual difficulty.

Thus, it appeared that the pupils in the St. Paul immersion program were reverting to English for much of their cognitive processing--performing rapid, online translation or reprocessing when needed (Cohen 1994; Parker, Heitzman, Fjerstad, Babbs, & Cohen in press; Heitzman 1994). This finding may be interpreted in both a negative and a positive light. On the minus side, online reprocessing into the L1 may help to suggest why the immersion pupils were not as fluent in Spanish as might have been expected after so many years of daily exposure to it in the classroom. On the plus side, there may well be advantages of a cognitive nature stemming from skillful two-language "translation-bouncing" (Wallace

Lambert, personal communication, January 14, 1994). Skillful translation would mean doing it so swiftly and successfully that no one could call it a crutch and few would even be aware that it is going on. The assumption, of course, is that the pupils can bounce back--that is, perform two-way translation with ease. Immersion programs may well have this feature of promoting flexibility in simultaneous translation, but the extent to which it is a two-way skill needs to be investigated.

Multilingual Thought Processes in Producing an Utterance

The research literature is all but devoid of systematic research on the language(s) that multilinguals actually do their thinking in from moment to moment. There is a considerable amount on the languages speakers use for given interactions, but virtually nothing on the thoughts leading up to those utterances. Cohen and Olshtain (1993) began to investigate this issue by asking respondents to view videotaped footage of themselves performing speech acts in role play situations in English as a foreign language, and to reconstruct the choice of language for the planning of the utterances.

Looking at the total group of fifteen respondents performing six role plays each, the three most common patterns were "planning in English and responding in English" (21 instances across 9 speakers), "planning in Hebrew and translating from Hebrew to English in the response" (17 instances across 7 speakers), and "planning in Hebrew with the response in English" (16 instances across 8 speakers). There were actually 16 other patterns. Hence, response patterns were complex, and further such research would seem warranted.

While investigating the selection of particular speech styles in the LT, Cohen and Olshtain found that multilinguals who may function largely through an LO while learning and using the LT, may revert to their L1 to determine the appropriate style for a given utterance. This is what a native French speaker reported after role playing a situation of asking his teacher for a lift home. He indicated that he thought the utterance through in French (the L1) first because he was aware it called for deference to status. He then translated the utterance into Hebrew (the LO), and finally produced what he felt would be an appropriate English (L3) equivalent of that utterance (Cohen & Olshtain 1993).

Conclusions

This paper has asked more questions than it has answered. Since inner speech is by its very nature "inner," it is difficult to describe the extent to which a multilingual's various languages might play a role in it. For this reason, a brief comment about research methodology seems in order. Perhaps the most viable means of collecting such data is through verbal report, as seen in the several studies reported above (Kern 1994; Cohen 1994, Heitzman 1994, Parker et al., in press; Cohen & Olshtain 1993). Such verbal reports would include data that reflect self-report (learners' descriptions of what they do, characterized by generalized statements about their language behavior), self-observation (the inspection of specific, not generalized language behavior introspectively--i.e., within 20 seconds--or retrospectively), self-revelation (think-aloud, stream-of-consciousness disclosure of thought processes while the information is being attended to), or some combination of these (Cohen 1987, Cohen & Hosenfeld 1981, Radford 1974).

Critics of verbal report methods note that much of cognitive processing is inaccessible because it is unconscious (see, for example, Seliger 1983). Even if the processing is not unconscious, it has been considered either as too complex to capture in protocols (Dobrin 1986), or as putting too great a burden on the learners' memory for them to report mental processing with any accuracy. Thus, researchers who use such measures either have to somehow raise the level of conscious awareness of processing or make do with insights regarding those processes to which respondents have conscious access. The use of such measures may also require of respondents that they unravel some of the complexity inherent in a given set of cognitive processes and/or improve their recall skills.

Verbal report techniques are also criticized for their potentially intrusive effect. For example, in reading research, attention is drawn to the possibility that immediate retrospection may distort the process of reading if the readers read more closely than normal, read sentence by sentence, or concentrate on the additional cognitive and metacognitive task (Mann 1982). Not only is there the possibility that the verbal report task may cause reactive effects, and thus produce data no longer reflecting the processes intended to be investigated; there is also the possibility that the results will vary according to the type of instructions given, the characteristics of the participating subjects (some more informative than others), the types of material used in collecting protocols, and the nature of the data analysis (Olson, Duffy, & Mack 1984).

Despite the numerous criticisms that have been raised, research has demonstrated that verbal reports, elicited with care and interpreted with full understanding of the circumstances under which they were obtained, are, in fact, a valuable and a thoroughly reliable source of information about cognitive processes (Ericsson & Simon 1980, 1993). Whereas the neurological origin of cognitive processes may not be available for inspection, the cognitive events themselves are available through verbal report (Steinberg 1986: 699). It is suggested that language learners underestimate the extent of conscious (or potentially conscious) processing because they are not attending to it. Furthermore, the directness of introspection gives it a character not found in any other investigation of psychological phenomena (Bakan 1954).

In a recent study by Nyhus (1994), seven college ESL students read a sociology text and provided think-aloud protocols in English as they read, as well as retrospective verbal report while they listened to the tape-recording of themselves thinking aloud. They also responded to questions regarding their attitudes toward the research methodology of verbal report itself. Respondents were found to view most of the effects they attributed to verbal report as beneficial. For the most part, they felt that think-aloud verbal report affected their thinking about their reading in a positive way. It was reported to enhance their awareness of themselves as readers and of their interaction with the text. The two students who had some negative comments about the verbal report, which was conducted in English, were those with more limited English. Respondents viewed verbal report as useful as both a diagnostic tool and as a study technique. They felt that doing it in pairs or in a group allow them to realize alternative ways of thinking about a text.

Hence, the challenge is to refine the methods for describing the language of thought of multilinguals--to investigate where possible through verbal report and other methods the differential uses of the languages in thinking. Undoubtedly there is much that will not be accessible to description, but the field can benefit greatly from more insights regarding what can be described. It could be of interest to determine the extent to which multilinguals think in mixed codes, just as certain multilinguals may speak in mixed codes, and also to determine the effects that such language behavior has on the outcomes.

Just as it is valuable to sort out the issues of multilingual thinking and inner speech from a psycholinguistic perspective, there is a commensurate need to explore more fully the sociolinguistic dynamic of inner speech. How do adult multilinguals think through issues in different discourse domains? How do children in language immersion programs do the same? It would appear that knowledge regarding these phenomena could help inform foreign language teaching and in content-based instruction delivered through a second or foreign language. It would, for example, be possible to generate a grid of the context/content of data collected from the sample through verbal report. The grid could indicate the nature of the content, the context or discourse domain it belongs to, and the extent to which the thoughts involved one of a series of categories as in Cook's (1994) survey—e.g., memory tasks, mental calculations, display of emotion, and so forth.

While we only looked at a limited data set regarding the effects of extensive target language thought during language learning, the evidence seems to suggest that the effects are positive. All the same, the appropriate role of a paper such as this one may simply be to define a possible research area and to encourage applied linguists to explore it before making pronouncements about which course of action is preferable with regard to foreign language teaching methodology. Ultimately there may emerge a set of guidelines for learners as to the advantages and disadvantages of thinking through the native language while performing target language tasks. Such guidelines may even be specified according to learning style, stage in the learning process, and so forth. At present we can only speculate about these matters until more research data such as those collected by Kern (1994) are amassed.

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Appendix

In Which Language Do/Should Multilinguals Think?

1. a. Did you ever find yourself thinking in some language without intending to? Describe the situation.
   b. Do you then purposely switch your thoughts to another language? If so, why?

2. Have you ever had multilingual thoughts—i.e., thoughts that begin in one language, continue in another, and possibly end in a third? Describe.

3. a. Have you ever chosen to think through a second language for the purposes of learning a third language (e.g., because the L2 was closer to the target language than your native language, such as in learning Portuguese through Spanish rather than through English)? Please describe the situation.
   b. If the answer is "yes," to what extent do you continue to think through that L2 when you use your L3 today? Please explain.

4. a. During your L2 learning experiences, have you ever been admonished by your teacher to think through that target language? Describe.
   b. Have you made an effort to think extensively through the target language? If so, with what results?

5. a. When you are reading in an L2, to what extent do you find L1 or L3 glosses/translations for words you don't know? Explain.
   b. To what extent do you gloss words by means of an L2-L2 dictionary?
   c. Think of an L2 you have contact with at present. To what extent do you just read without going to a dictionary? Explain.
   d. How well does this work?

UG Accessibility in Second Language Acquisition: Re-examining the Binding Parameter

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This paper re-examines the controversial issues of the binding parameter in second language acquisition. In light of the findings from other related disciplines, including linguistics and first language acquisition research, this paper argues that the earlier claimed evidence which suggested L2 learners were able to access UG (universal grammar) by resetting their binding parameter can be explained as the result of transfer from learners' first languages. From this *transfer* perspective, some problems regarding long-distance anaphora in earlier studies can also be resolved more convincingly. It is argued that more attention should be given to L2 learners prior knowledge in investigating the effect of UG in second language acquisition.

The 1980's marked the turning point for bringing mainstream linguistics and SLA together. The explanatory potential of Universal Grammar (UG) became widely recognized, and the question of its "applicability" to L2 learning became the focus of considerable research.

One of the major topics for investigating these linguistic constructs is to determine if Universal Grammar is still accessible/available to second language learners. Researchers hold several different positions. White (1990) reviews three different theoretical claims for UG:

(1) UG is fully available for L2 learners;
(2) the L2 learner's access to UG is mediated by the mother tongue;
(3) UG is not available to L2 learners.

White declares possibility (1) to be unproven, though she clearly supports at least the possibility (2). Other researchers, such as Carroll & Meisel (1990) and Clahsen (1990) are among the skeptics who prefer the third possibility.

Researchers have been examining various linguistic constructs to determine if UG is still accessible to second language learners. Eubank (1991: 24) summarizes the five major research areas as follows: head-position and anaphor direction, anaphoric binding, the recognition of UG violations in the L2, the pro-drop phenomena, and the development of Germanic word order.

This paper will focus on anaphoric-binding. According to Thomas (1991), this topic receives so much attention for several reasons. First, the study of these items within generative linguistics has resulted in a rich body of observations about their nature. Second, while certain universal constraints are imposed on anaphors, aspects of these constraints differ from language to language (parametric variations). Third, L2 learners do not normally receive overt instruction about rules governing anaphors, so this is an unlikely source of hypotheses about their interpretation. This domain therefore might be an area where the effect of UG can be investigated.

Though there are quite a few studies on this linguistic construct, Rutherford (1994), points out that so far there are conflicting findings. Thomas (1991) claims that the learners can have access to UG. Finer and Broselow (1986) found that the L2 learners chose an intermediate value. Hirakawa (1990) and Cho (1991) reports that the most L2 learners simply transfer their L1 value. The issue therefore clearly remains controversial.

In this paper, the basic assumptions about long-distance anaphora in first and second language acquisition will be introduced briefly. The previous evidence supporting UG accessibility will be questioned and some methodological problems will also be discussed. It will be argued that L2 learners' first language, instead of UG, plays an important role in interpreting the anaphora.

Binding in Linguistic Theory

According to Chomsky (1981, 1986), anaphor, which includes reflexives and reciprocals, is subject to Principle A of the Binding Theory:

(1) Principle A: An anaphor is bound in its governing category.

While Binding Principle A is a principle of UG, the notion of "governing category" is a parameter in UG, which means that it varies from language to language. Manzini and Wexler (1987: 53), based on cross-linguistic data, proposed that UG provides the settings in 2 (a-e) for the governing category parameter:

(2) The Governing Category Parameter (GCP)

a is a governing category for **b** if and only if **a** is the minimal category which contains **a** and has

a. A subject: or
b. an INFL (inflection)
c. a Tense
d. a referential Tense; or
e. a *root* Tense

English reflexives are associated with setting 2 (a) of the governing category parameter. Consider the following English sentence:

(3) Mary believes that Nancy does not like herself.

The only antecedent for the English reflexive given above is Nancy. However, the parallel Chinese sentence (4) can mean both *Zhangsan* does not like *Lisi* as well as *Zhangsan* thinks that *Lisi* does not like *Lisi*. The Chinese reflexive *ziji*, therefore, is subject to the parameter setting 2(e).

(4)	Zhangsan renwei	[Lisi bu	xihuan	ziji].
	Zhangsan thinks that	[Lisi does not	like	self].

Zhangsan thinks that Lisi does not like Lisi.
Zhangsan thinks that Lisi does not like Zhangsan.

The difference between Chinese and English is that the governing category for the English reflexive is restricted to the embedded sentence, that is, a more local domain. For Chinese, the reflexive can be co-indexed with either a local or nonlocal antecedent (the main clause). The nonlocal anaphor in languages such as Chinese is the so-called *long-distance anaphora* (LD anaphora).

Long-Distance Anaphora in First Language Acquisition

The Subset Principle and resetting of the Binding Parameter

According to Berwick (1985), the Subset Principle, a learning principle of UG, states that the learning function maps the input data to that value of a parameter which generates a language compatible with the input data and the language that is the smallest among the languages compatible with the input data.

In line with the Binding Parameter, children will first adopt the 2 (a) setting, and later acquire the long-distance anaphora if necessary. In other words, children will first allow the reflexive to be co-indexed in the local domain, and later accept the nonlocal interpretation by resetting the GCP in acquiring languages such as Chinese. For languages such as English which generally allow only local reading, the children will never need to reset the parameter since there is no proper input (triggers) for them to reset it.

Conflicting Findings in First Language Acquisition

Some empirical studies on first language acquisition have tried to verify whether or not children follow the same developmental path as predicted in the linguistic generalization. Following the Subset Principle and the Governing Category Parameter, it is predicted that children in all languages will pass through a stage in which they bind the reflexives only locally, and then reset the parameter only if input indicates a need to do so.

A study on Korean children by Lee and Wexler (1987) seems to support a parametric approach. According to this study, Korean adults choose the local antecedent only 38% of the time, preferring the LD interpretation. Children go from a 60% preference for local at age 3:6 (year:month) to 100% preference for local at age 4, and stay there up to age 6:6 (the oldest age group in the study). At this stage, Korean children still have not broadened the Governing Category for the reflexive. It seems that Korean children first pass through a stage in which the local interpretation is permitted and gradually move on to accept a nonlocal interpretation. These findings seem to favor the parametric approach.

Jakubovicz and Olsen (1988) found adults have a 100% preference for LD binding in Danish, another language with LD anaphora. However, only 7% of the Danish children at age 3-3:5 chose the correct LD antecedent, increasing to 70% of the children correctly choosing the LD by age 9. The study provides direct support for the parameter setting approach since there is a clear-cut difference between Danish adults and children.

Nevertheless, Hyams and Sigurjonsdottir (1990) reported that in another language with LD anaphora, Icelandic, children perform like adults from quite early on. According to Hyams and Sigurjonsdottir, there is no clear supporting evidence that Icelandic children first pass through a local and then progress to a non-local setting. Of further interest, they indicated that the probabilities of choosing the long-distance binder varies with particular verbs. With certain verbs such as the verb *elska*, 'to love,' it is much more natural for the LD anaphor *sig* to take a long-distance antecedent. Hyams and Sigurjonsdottir refer to such verbs as long-distance verbs or *gefa* verbs.[1] Other verbs such as *raka* 'to shave,' however, impose a bias toward the local antecedent.[2]

Similar counter evidence was reported in another language with LD anaphora, Chinese. Chien and Wexler (1987) found that both Chinese children and adults have a strong bias for local binding for the sentence given in (5):

(5) xiao-houzi shuo Xiaohua gei ziji yi-zhang tiezhi.
'That little monkey says that Xiaohua gives SELF a sticker."

In another experiment, Chien, Wexler and Chang (1990) reported that when there was no forced choice between the antecedents, 85% of both adults and children accepted the local antecedent. Furthermore, 40-50% of both adults and children also accepted the non-local antecedent. Although

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[1] The verb *gefa* 'to give' is also a long-distance verb, but it will more easily accept a local antecedent than the verb *elska*.

[2] According to Richards, Platt and Platt (1992:312), a reflexive verb is a verb used so as to imply that the subject is doing something to himself or herself without using a reflexive pronoun. The example they give is *I was shaving*.

Chinese is commonly cited as a language with LD anaphora, it is important to note, first, that adults prefer local antecedents at least for some types of sentences, and second, that both adults and children accept long-distance anaphora. The theoretical prediction that Chinese children will go from the local interpretation and then move on to nonlocal is not borne out.

It seems clear that although some languages do allow long-distance anaphora, the children in those languages do not necessarily acquire the local interpretation first and then move on to the non-local one. There is also great variation across various studies, and if the lexical effect is as strong as observed by Hyams and Sigurjonsdottir in interpreting anaphora, the corresponding results might stem from the different stimuli. The results from the empirical child language acquisition research on anaphora, therefore, challenges the theoretical predictions.

Long-Distance Anaphora in Second Language Acquisition

Working independently, second language researchers explore what happens for learners whose L1 (e.g. Chinese, Japanese, Korean) allows a nonlocal anaphor (a marked/superset setting) when acquiring English, that allows the local anaphora. Do they observe the Subset Principle when acquiring the second language? When do the learners observe the subset principle: do they observe the principle from the very beginning or reset the parameter later? or do they simply transfer L1 settings into L2?

Perhaps one of the most well known of such investigations is the pilot study of Finer and Broselow (1986). Finer and Broselow chose to examine how speakers of Korean, whose binding properties conform to the broadest superset on the parameter, the non-local setting, learn the binding properties of English, which conforms to the most restricted subset of the parameter.

Finer and Broselow's findings are hard to interpret. The results of their picture identification task indicate that these adult, mostly intermediate, learners apparently employed a binding value that is intermediate between that of Korean and that of English. The authors found that their subjects bound 91.7% of the reflexives to local antecedents in sentences like *Mary believes that Nancy does not like herself*, when the reflexive was inside a tensed clause. However, in infinitive sentences such as *John asked Bill to paint himself*, only 58.3% of the reflexives were bound locally. Importantly, Finer and Broselow argued that this value could not have been established on the basis of either English or Korean, but it is still a representation licensed by Universal Grammar.

Hirakawa (1990) asked the same question, that is, whether learners observe the Subset Principle and successfully acquire the correct L2 value, or whether they wrongly transfer their L1 value to the L2 grammar, or, finally, whether they assume a value in between. She reported that the L2 learners (Japanese high school students) transferred their L1 parameter setting (the non-local setting), leading to transfer errors, i.e., a non-operation of the Subset Principle at least some of the time. However, Hirakawa suggests that parameter resetting is also possible, at least for some learners. Hirakawa's results are summarized in Table 1.

A very similar study conducted by Cho (1991) also indicated that the Subset Principle is not available to adult Korean second language learners. Most of these learners transferred their L1 setting by choosing the non-local setting and therefore failed to observe the subset principle. Nevertheless, the successful acquisition of English reflexives by some advanced Koreans subjects, according to Cho, suggests that the resetting of a parameter is possible in second language acquisition even in the absence of relevant "negative evidence."

Thomas (1989) examined the differences between Chinese and Spanish learners learning English. Her assumption was that Chinese has the marked (non-local) setting and that Spanish allows only the unmarked (local). Following the parametric approach, Chinese L1 learners should have greater difficulties than Spanish L1 learners in learning English reflexives. It is interesting to note that because no significant differences between the two groups were found, the empirical data seem to constitute a problem for Thomas' predictions. The summarized results are given in Table 2.

Thomas (1991) conducted another similar experiment on Spanish and Japanese learning English. Her new data (adapted in Table 3) indicate that an average of about 80% Spanish (with local setting) and Japanese (with nonlocal setting) learners of English can have direct access to Universal Grammar by choosing a local binder in finite English sentences such as *Mary believes that Nancy does not like herself.* Thomas (1991) claims, "L2 learners observe constraints defined by UG, constraints which could not have derived solely from inspection of input data, nor from the treatment of anaphors in their native language." Thomas argues that these data indicate that UG does constrain L2 acquisition, though she was not able to specify when, if the learners access UG in the very beginning or reset the parameter during the acquisition processes.

In a complementary study conducted, again by Thomas (1991), on the acquisition of Japanese long-distance anaphor *zibun* by English and Chinese learners, she found that 50% of the Chinese learners of Japanese in her studies failed to observe the Subset Principle in their L2 development by choosing the non-local binders in the following Japanese sentence.

(6) Taro wa Mika ga zibun o aisite iru to omotte iru.
(Taro thinks that Mika *loves* herself).

Thomas predicted that if UG is indeed fully accessible to second language learners, then both American (local settings) and Chinese (non-local settings) learners of Japanese would choose the local binder *Mika*. Her findings show that although most Americans did choose *Mika*, most Chi-

Table 1
Percentage of reflexive pronouns bound by Japanese L1 learners of English according to the place of reflexive and distance of antecedent. Hirakawa (1990).

	Local	Nonlocal
Tensed clause	77	17
Infinitive	55	36

Table 2.
Percentage of bound reflexive pronouns in finite sentences in two differing languages. Thomas (1989).

	Local	Nonlocal	Either
Spanish	59	19	21
Chinese	69	7	23

Table 3.
Percentage of bound reflexive pronouns in finite sentences in two differing languages by proficiency level. Thomas (1991).

L1		Local	Non-local	Either
Japanese				
	Low	80	5	5
	Mid	76	0	16
	High	84	0	16
Spanish				
	Low	95	5	5
	Mid	70	5	20
	High	81	0	10

nese chose *Taro*. According to Thomas, this means that Chinese are not constrained by UG. The finding seems contradictory to what the previous study, Thomas (1989), found about Chinese learners, namely, that most subjects (69%) in that study chose local settings. To account for this anomaly, Thomas suggested that it might be possible that the learners had acquired the "preference" of native Japanese speakers, since the native speakers in her control group strongly prefer the non-local reading.

Another puzzle raised by Thomas in the same study is why 25% of the Chinese speakers chose the local antecedent *Mika*. This is remarkable, ac-

Figure 1: A comparison of phrasal reflexives

	Chinese	Japanese	Korean
myself	wo ziji	watashi zisin	na casin
yourself	ni ziji	anata zisin	ne casin
himself	ta ziji	kare zisin	ku casin
ourselves	women ziji	wareware zisin	wuri casin
yourselves	nimen ziji	anatatachi zisin	nedul casin
themselves	tamen ziji	karera zisin	kudul casin

cording to Thomas (1990, 1991), since there is no evidence in the input that Japanese requires local antecedents, and we have been assuming that Chinese speakers' L1 has a marked governing category setting. Thomas raises the possibility that the Chinese speakers directly access UG in this case by choosing the local setting. This claim would suggest that UG is accessible from the very early stage for Chinese L2 learners of Japanese. In this case, Thomas did not even consider the possibility of transfer.

Controversies on Accessibility

It is difficult to have a clear picture concerning UG accessibility based on the results reviewed above. The answers to when and how these learners access UG are not clear. Both Hirakawa (1990) and Cho (1991) found that most of their subjects transferred their L1 value and failed to observe the Subset Principle, although resetting seemed to be possible for some advanced learners. Thomas (1989, 1991) offered some evidence that Japanese and Spanish L2 learners of English did observe the subset principle by choosing the local binders; however, some problems encountered by her studies are left unresolved. Finer and Broselow (1986) suggested the alternative that learners (Japanese and Korean native speakers) adopt the intermediate value in judging English sentences where there are differences between tensed and infinitive clauses.

Challenges to UG accessibility: Local Settings in L1

Phrasal reflexives

Given that the findings accumulated so far are so diverse, Yuan (1994) critically reexamined the issue of binding parameter in SLA. Yuan correctly pointed out that in fact Chinese, Japanese, and Korean have both the widest governing category and the narrowest governing category for its phrasal reflexives, as given in Figure 1. While most SLA research focus on the bare reflexive in Chinese, Japanese, and Korean, Yuan argued that Chinese, Japanese, and Korean "phrasal reflexives" are all bound locally, and that they behave exactly the same as English reflexives.

According to Yuan (1994), the evidence found by Thomas (1991) and others could also be explained as transfer of knowledge of phrasal reflexives because Chinese, Japanese and Korean learners could use their L1 phrasal reflexives when asked to choose the possible antecedents. Knowledge of *both* phrasal reflexives and bare reflexives in their first language should be available. The choice of the local antecedent by L2 learners, therefore, could thus be explained as transfer from the L1 knowledge of phrasal reflexives, instead of from a UG effect. However, we still do not know when and how Chinese, Japanese and Korean learners of English use their intuitions of bare and phrasal reflexives in grammatical judgement tasks.

Bare Reflexives

In addition to what Yuan has proposed concerning the phrasal reflexives in learners' L1, another possibility ignored by most second language research so far is that the local antecedent or binder is in fact allowed or even preferred in languages with long-distance anaphora, as pointed out by both linguists and first language acquisition researchers. There is a great difference between assuming that Chinese, Japanese, and Korean allow anaphors that *can* be bound non-locally and that they allow anaphors that can be bound *only* non-locally.

Chien and Wexler (1987) indicated that Chinese native speakers (both adults and children) clearly prefer local binders in some types of sentences. Chien, Wexler, and Chang (1990) found that in an experiment in which there was no forced choice, 85% of both adults and children accepted the local antecedent. More clearly, Battistella and Xu (1990) conducted an extensive survey of Chinese native speakers' judgments on long-distance anaphora and found that there is a consistent "minimal effect" in the Chinese interpretation of *ziji*. For sentence (7), all 16 Chinese native speakers choose the local binder *Wangwu*. The lexical effect clearly plays an important role in interpreting the long-distance anaphora in Chinese.

(7) Zhangsan tongzhi Lisi Wangwu yijing jietuo-le ziji
Zhangsan inform Lisi Wangwu already free-LE self
Zhangsan informed Lisi that Wangwu had freed self.

Hyams and Sigurjonsdottir (1990) even labeled the verbs such as *raka* 'to shave' as a local verb. Based on these findings, it seems obvious that the verbs in combination with sentence structures can greatly influence the interpretation of long-distance reflexives. The lexical effect possibly might be universal. If verbs that have minimal effects are chosen in a second language (e.g., English), then it seems very difficult to determine whether Chinese learners of English are using their L1 setting or having access to UG if they happen to choose a local setting in the L2.

Based on these empirical findings, the basic assumption held by Thomas (1989, 1991) and other studies that the local setting is not possible in languages such as Chinese, Japanese, and Korean- is evidently problematic. The empirical findings that second language learners choose or prefer the local binders do not necessarily imply that they have access to UG. The local setting is in fact already accessible from various resources of L2 learners' first languages. The local interpretations of English reflexives can be derived from the mentioned phrasal reflexives or from the bare reflexives that appear in certain structural configurations (some types of verbs and/or sentence structures).

This analysis might further explain the puzzle of why Thomas' study (1989) shows no clear difference between Chinese and Spanish learners of English. In that study, Chinese learners chose even more local settings than Spanish did (Table 2). Chinese learners accepted both local and non-local settings in their L1, and their interpretations could have been biased toward the local or the non-local by lexical and structural effects. White (1989: 162) also points out that Thomas' findings regarding Chinese learners could have been explained in terms of the transfer of the L1 value. If the performance of Chinese subjects in Thomas' study (1989) is considered to be the result of L1 transfer, then it seems necessary to reconsider the linguistic competence of Chinese learners because Chinese, in fact, do accept the local antecedent 69% of the time. The theoretical assumptions regarding Spanish and Chinese held by Thomas and some other researchers, therefore, seem inaccurate.

Lexical Effect and Thomas' Puzzles

It seems that previous research generally did not investigate learners' first language competence. The fact that a language allows LD anaphora (e.g., Chinese, Japanese, and Korean) does not imply that in that language the local interpretation is not possible or the local reading cannot be preferred in certain structural configurations.

Many grammatical judgment tasks in second language research do have a control group for the target language, but most do not have a control for the learners' first language. This decision can lead researchers to reject the possibility of L1 transfer too easily. In order to assure that the L2 learners' performance is under the influence of UG, it is necessary to exclude the possibility of L1 transfer. The need to investigate L2 learners' first language competence in UG availability research is further evidenced by some of the other problems encountered by Thomas (1991).

According to Thomas (1991), if UG is fully accessible to second language learners, both the American (subset) and Chinese (superset) learners of Japanese in her study should have chosen the local binder *Mika* for *zibun* in Japanese sentence (8).

(8) Taro wa Mika ga zibun o aisite iru to omotte iru.
(Taro thinks that Mika loves herself).

Nevertheless, her finding was that though most Americans did choose *Mika* half of the Chinese subjects chose *Taro*. According to Thomas, this could mean that Chinese fails to be constrained by UG. Thomas, however, also suggested the possibility that the Chinese learners of Japanese might acquire the preference of Japanese native speakers. This is not a convincing explanation because Thomas never explained why the advanced American learners of Japanese in the same study rarely chose *Taro*.

It seems that Thomas ignored the effects of possible universal lexical constraints of the L2 and excluded the possibility of L1 transfer too early. When taking a close look at sentence (8), used as a stimulus by Thomas (1991), we notice that the verb in the embedded clause is *aisiteiru* 'love':

In contrast to the minimal effect noted above, Hyams and Sigurjonsdottir (1990) reported that in Icelandic the lexical effects lead the subjects to strongly prefer a long-distance antecedent. In the Icelandic data they even classify Icelandic verbs as both *gefa* 'love' (long-distance verb) and *raka* 'shave'(local verb)

The verb *aisiteiru* 'love' used by Thomas (1991) as a stimulus is exactly the most typical long-distance verb reported by Hyams and Sigurjonsdottir (1990). Since Japanese is a language with long-distance anaphora, the Japanese native speakers in Thomas (1991) uniformly chose the non-local binder (*Taro*) and none of them allowed only the local antecedent. The Chinese learners of Japanese might be also under the influence of the strong lexical effect of the L2. Their uniform interpretation might be related to the verb *aisiteiru* 'love' used as the stimulus. The lexical constraint on interpreting anaphora might play an important role across different languages such as Icelandic, Chinese, and Japanese.

In addition to the possible lexical constraint of the target language, another possibility is L1 transfer. Chinese is also a language with long-distance anaphora, so there is a need to examine the Chinese native speakers' intuition on the corresponding Chinese sentences of (8). Chen and Kuo (1994) conducted an investigation on Chinese speakers' intuition on the Chinese version of the same sentence. Their result showed uniformly that most Chinese native speakers also strongly prefer the non-local antecedent.

Thomas' puzzle therefore could be more convincingly explained as the transfer of L1 knowledge. It seems clear that the lexical effect of the verb *love* might play an important role in determining which antecedent is preferred across different languages with LD anaphora (Chinese, Japanese, Icelandic). In sum, Chinese learners' performance in Thomas' study, therefore, could be due to either the transferring L1 value or the lexical constraints in the L2 (Japanese).

Another related puzzle raised by Thomas is why 25% of the Chinese speakers chose the local binder *Mika*. This is remarkable, according to Thomas (1990, 1991), since there is no evidence in the input that Japanese requires local antecedents, and we have been assuming that Chinese speakers' L1 has a marked governing category setting. As explained earlier, if we realize that Chinese and Japanese not only have a marked governing category but also allow an unmarked setting, then it does not seem difficult to interpret the findings.

For this highly complicated issue of determining the possible/preferred antecedents of LD anaphora, Battistella and Xu (1990) and Xu (1993) concluded that:

a. for each sentence pattern, the potential antecedent in one position is more probable to be chosen as binder of *ziji* than the one in another position.

b. In no pattern, the potential antecedent in one position is the only choice;

c. in each pattern, the rate of probability varies from sentence to sentence.

The second generalization helps to explain why some of the Chinese subjects still chose the local setting even though it is a less preferred reading for this particular sentence.

It is clear that the research on the role or effect of UG on second language acquisition should look into the effect of the learners' first language. Before having a clear understanding of L2 learners' first language, the possibility of transfer cannot be rejected hastily.

Conclusions

The basic format for conducting research on the accessibility of Universal Grammar was suggested in White (1990): researchers needed to investigate the effects of UG through the interlanguages of different language learners. Nevertheless, White pointed out that the knowledge of the first language is a serious confounding variable which prevents us from seeing the real effects of universal grammar in second/foreign language learning. To eliminate the L1 effects, researchers have to choose the subjects and the language very carefully.

In the case of the availability of principles, one must make sure the principle does not operate in the L1, that is to say, that the learners do not have access to this principle in their L1 (e.g., Subjacency in Korean). Then, when asked to judge sentences in an L2, the learners will behave within the norm of UG if they do have access to UG. However. if they do not obey the norm licensed by UG, then it is possible that they do not have access to UG.

In the case of the associated parameter, one must also make sure the setting is not available in the L1, that is to say, that the learners do not have access to this parameter value in their L1. If the setting of a given parameter is already accessible or even preferred in learners' first language, the claim that the L2 learners can have access to UG becomes highly questionable.

In the examined case of long-distance anaphora, the basic assumptions held by much second language acquisition research have not been accurate. The Chinese, Japanese and Korean L2 learners of English probably were not 'resetting' the parameter since a local setting is allowed or sometimes even preferred in their first language. Some of the evidence suggesting that some L2 learners can have access to UG by choosing the local interpretation could be due to an L1 transfer or a loose control of the L2 stimuli used for eliciting tasks (minimal or local effects of verbs). In fact, the great variation of the percentage of local versus nonlocal antecedents reported in various second language binding studies can be partly explained by the complicated interactions of learners' intuition of L1 anaphora, the different stimuli used, and the learners' developing competence of the L2.

One might also wonder whether or not the three generalizations made by Xu (1993) are valid for many languages with long-distance anaphora. Some researchers working outside the formal generative mainstream (Kuno 1986; Zribi-Hertz 1989) have already pointed out repeatedly that the interpretation of anaphors across languages can not be resolved simply based on grammatical factors, and that there are many other pragmatic factors involved. More empirical research is needed to uncover the interpretations of LD anaphora.

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Helping Philippe: Constructions of a computer-assisted language learning environment[1]

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This article offers an interpretive microanalysis of university students' work sessions with *Philippe*, a multi-media instructional program for foreign language learning. The program's potential as a computer-assisted language learning (CALL) environment is discussed here. Students in 12 groups were observed and interviewed during various *Philippe* sessions. These sessions were video-recorded. Qualitative analysis reveals different levels of actualization of *Philippe*'s potential as an effective CALL environment. Microethnographic evidence points to an interplay of motivational as well as local interactional factors shaping the students' overall stylistic approach to utilizing the program and the construction of distinct learning environments. Sessions by the two most extremely contrasting groups of students are described in further detail. A complex set of interconnected contextual factors is found to explain their diverse levels of activation of the program's potential as a learning environment.

The use of computers in education has grown tremendously in the past few decades and is now widespread to many content areas. According to Papert (1993), computers can help learners learn about learning (what he calls *mathetics*), and they can be sources of knowledge about how to get more knowledge. Central to this view is the belief that the improvement of instruction is not "the only route to better performance." Another route is "offering children [or learners in general] truly interesting ways in which they can *use* mathetics ... or *think about* it ... or *play* with it" (p. 140).

Computer-assisted language learning (CALL) is a specific domain in the interface between computers and education which provides tools to

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help people learn foreign languages. In their latest efforts, CALL materials designers have been striving to develop instruments that attempt to reproduce, in a controlled environment, some of the challenges that language learners would encounter in the real world. *A la rencontre de Philippe* (hereafter referred to as *Philippe*), the multi-media instructional program in question, is the result of a large project to develop an integrated computer/audio-visual interactive instrument. Its goal is to engage learners of French-as-a-foreign-language in a learning experience in which they can control various factors, such as adjusting pace and accessing language help, while still facing the most genuine everyday tasks that present-day technology can offer to aid the development of comprehension skills beyond "the purely linguistic dimension of language" (Teacher's Guide, p. 5).

Crookall, Coleman and Oxford (1992: 94) argue that before we inquire about whether computers make language learning more effective, "we need first to ask 'what is CALL like?' or 'what happens when a computer is used in language learning?'" This study is therefore guided by an interest in describing the actions of students of French as a foreign language when they use *Philippe*, and the specific conditions that influence these learners' degree of activation of *Philippe*'s potential as a learning environment.

What is Philippe?

Different perspectives will yield different answers to this question. The reference materials that accompany the program describe *Philippe* as "an interactive video designed ... to improve students' language comprehension skills by exposing them to the spoken French of native Parisians" (Reference Manual, p. 1). The basis of *Philippe* is a videodisc especially produced for interactive pedagogical use. The action revolves around a young free-lance journalist, Philippe, who has been thrown out of his girlfriend's apartment after a serious argument. Students are asked to find a solution to Philippe's predicament: before the day is over, Philippe has to both finish a story which could lead to a permanent job, and find a new place to live. Seven distinct endings are possible, including finding Philippe an apartment to rent, or perhaps patching things up with his girlfriend. According to the answers they give to Philippe's questions and other actions they perform throughout their session, students see different scene versions and follow different storylines. They can visit real estate agencies, apartments, and bakeries using a map of Paris for "surrogate travel." As claimed in the Reference Manual, comprehension tools such as video and text previews, context-sensitive help, full and partial French subtitles, an electronic glossary, and an alternative studio soundtrack — all of which the teacher can control access to — allow for *Philippe* to be used by students of different levels.

The makers of the program therefore emphasize *Philippe*'s technology by defining it as an *interactive video*. Strictly within a foreign-language-pedagogy perspective, an interactive video involves the incorporation of video material to a computer program which, according to Jung (Jung 1992: 31), "accesses bits and pieces of video ..., asks questions in connection with the excerpts shown and evaluates students' answers to branch off into further questions or to present remedial loops to those students who experience an undue amount of difficulties." Jung also refers to interactive video as "close to being an ideal technical configuration for the autonomous and / or self learner."

The main objective of *Philippe* is to provide French-as-foreign-language learners with what is widely assumed to be what they need most: "contacts with native speakers of the target language" (Jung 1992: 33) and with the native environment. The *Teacher's Guide for* A la rencontre de Philippe makes this objective explicit, since the manual tops its list of the three major advantages of videodiscs in language learning (the others being *control*, and *interaction*). It argues that "the computer ... gives the learner a large array of tools which will allow them to explore the materials in a controlled manner." This "gives the learner the opportunity to come in direct contact with a foreign environment" while avoiding what is perceived as a problem of immersion situations which "can also be overwhelming, as the learner may feel inadequate and not sufficiently proficient" (p. 3).

From a more generic perspective, *Philippe* is a *computer-mediated language learning environment*.[2] Crookall et al. (1992: 93), who see control and interaction as the two major dimensions to be looked at in CALL research, propose four types of computer mediated learning environments: computer-determined, computer-controlled, computer-based, or computer-assisted. These environments vary in two respects. The first is the degree of learner-computer and inter-learner interaction they allow or promote. The second has to do with the locus of control over the environment (learner or computer), with "each element being inversely proportional to the other: [i.e.] the greater the learners' control over the learning environment, the less the computer has control; and the more inter-learner, the less learner-computer interaction there is" (p. 101).

At least in theory, *Philippe* is a computer-assisted environment (CAE). Crookall et al. (1992: 105) write that "this type of environment is characterized by a high level of both control over the situation and interpersonal interaction. Decisions and outcomes are essentially the result of inter-learner interaction and negotiation in social activities away from the computer." This fits nicely with many of the sessions of students using *Philippe* observed for this study and to be reported below. The learners exercise control not only over what comes up on the screen, depending on their decisions and interests, but also over how much work they will do, since there is no serious external penalty for not doing anything in particular (at least for the students in this study). In addition, Crookall et al. describe CAEs as involving complex language manipulation and situations often in the form of simulation. Both these features are certainly a part of working at *Philippe*.

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[2] The term *learning environment* will be used here to refer to the general set of elements in the setting and the situation, including (but not being limited to) both the computer/video and the learners (cf. Crookall, Coleman & Oxford 1992:95).

Thus Crookall et al. (1992: 105) conclude that CAEs also seem to have the highest learning potential in terms of "oral communication and social interaction skills." They write that this is so because CAEs put learners more in control of events while also fostering inter-learner, rather than computer-learner, interaction. In addition, CAEs have as their main goal the promotion of "involvement with the social dimensions of the situations" and conceptualize language "as a tool for meaningful communication among humans" rather than as a code.

These views reveal a belief in what a critic calls the "maxims of technological lesson design" (Garrett 1991: 3-4), i.e. that students learn best when they are in control and are involved in the material, and when they are in control of their own learning. Garrett shows skepticism about the validity of the underlying beliefs in conclusions like the one cited above, charging that they do not represent "testable hypotheses" or "a theory" (p. 5). Research in educational anthropology, however, seems to contradict Garrett's claim. Greenfield and Lave (1982: 186) have shown that "education that relies heavily on observation and imitation by the learner may be the most effective way to teach a given task but the least effective for transfer to a new task." If we agree that the effective development of foreign language comprehension skills must necessarily be generic, since every new comprehension task will be different from the previous one, we should see value in a learning environment which allows the student to learn by trial and error without social or economic risks (e.g., face loss), as is the case with *Philippe*.

In addition, the flexibility that *Philippe* offers to accommodate students with different levels of proficiency seems to indicate that it is an environment that allows for scaffolding by the program but at the learner's discretion. In other words, the program offers challenges and ways to meet them with various help features at the user/learner's disposal. Thus, ideally, *Philippe* can be activated as a zone of proximal development, as it allows for "potential development as determined through problem-solving under adult [teacher and native-speakers] guidance or in collaboration with more capable peers" (Vygotsky 1934/1978: 86, cited in Cole 1985: 155).

In summary, *Philippe* represents the state-of-the-art in computer applications to foreign language learning not only because of the technology behind it, but also for its potential to be constructed as an effective learning environment. As some researchers have pointed out, however, the actualization of all this potential is dependent on the way students use it (see Crookall et al. 1992: 96, for a brief review). Expanding Mercer's (1993: 37) comment beyond the classroom, the observations to be reported below confirm his view that "the quality of understanding that learners acquire through the use of information technology ... is not, and will never be, determined [only] by the quality of the interface between the learner and the technology."

Usually, however, concerns about interaction in CALL focus on the interaction between learner and computer (e.g., Garrett 1991). Crookall et al. (1992) see a need to correct that myopia in CALL research by necessarily looking, to the extent that this is possible, at the entire learning situation and the range of types of situations in which the computer may be involved in learning, and including interaction as a situational component. As they point out, "the most significant [interaction] in our case is, of course among the learners themselves" (p. 100). Other aspects of the situation, such as student-teacher relationships, are also important in this network of interactions. Even if *Philippe* is potentially rich, the analysis of the observations in this study will try to demonstrate that other powerful sociocultural elements intervene, and that they play a key role in the activation of *Philippe* into an effective learning environment.

The following sections report the observations and analyses of different actualizations of *Philippe* as a CALL environment by describing and discussing the doings of 12 groups of students working at it in various sessions.

Description of study

With Light (1993: 41), "here we shall be concerned with the claim that what goes on between learners can be crucially important to the effectiveness of the [computer-assisted] learning process." The main concern of this microethnographic study is to see to what extent the different student groups activated the potential of *Philippe* as a CAE in the terms described above, and show the range of variation among the different actualizations. More specifically, an attempt is made to describe the interaction of the various elements in the learning environment, especially inter-learner interaction, and the degree of fulfillment of *Philippe*'s potential as a computer-assisted foreign-language learning environment.

Data collection procedures

The work being reported here is part of an on-going CALL research project. In the fall of 1993, teachers of French X and Y in the Romance Languages department at a large U.S. university began efforts to formally incorporate *Philippe* in their regular course work. Two of these teachers (X and Y) collaborated with the project. Their students in an intermediate level course were videotaped while working at a *Philippe* station set up for them. The students in the two classes were fully informed about the recording of their sessions and were given the opportunity to go to another station located somewhere else on campus in case it was inconvenient for them to come to the research-site station for whatever reason.

Videorecording of the *Philippe* sessions followed Erickson's (1992) guidelines for the simplest shooting procedure. Two videocameras were used simultaneously: one recording the computer screen and the other encompassing the complete work station and the users. In addition to the audiovisual recordings, rough fieldnotes from direct observation were kept throughout all of the recorded sessions and were also used as data for this study.

Student interviews were also conducted both before and after the sessions.[3] In the first game session (G1), when students had only the generic task of completing the program, interviews focused on demographic information before starting the game and on impressions about *Philippe* after it was over. For the second game session when they had a specific-task (G2), students were asked to briefly describe what that task was before they started the session. A longer interview about comparative impressions between first and second sessions and final comments about *Philippe* was conducted after students completed both sessions.

Interviews aimed at being as informal as possible, and a loose agenda was followed. Students were asked to offer their impressions regarding the computer interface, an estimation of the time they thought they spent listening to French, their strategies according to their task and interests, and comparisons between working on *Philippe* versus other experiences they might have had with language lab materials. Observations were also made during one class meeting of one of the groups (teacher Y's) in which the students discussed their work with *Philippe.* Contacts were made with both teachers in order to clarify information and get their points of view of the situation.

Student Information

A total of 27 students were videotaped during their complete sessions at *Philippe* (1h30min, usually). Students were grouped differently in the two classes. Teacher X assigned them to work together based on her feelings of which students would work together best. Teacher Y left it up to her students to get organized into groups.[4]

Student groups were labeled according to the course section they were in (X or Y) and the chronological order in which their sessions were recorded. All X students were recorded during their first attempt at *Philippe,* in which they were not given any specific task other than to simply go through the program trying to find a solution to Philippe's problem. Students in groups 1X to 5X were also recorded during a second attempt, when their specific task was to complete a class assignment describing the relationships among the three major characters, as well as these characters' attitudes towards money matters. Y students were also recorded during their second attempt, in which their specific task was to describe the contents of two messages left on Philippe's answering machine, and then to collect information to write a good-bye letter from Philippe to his girlfriend.

Primary data analysis

The analysis of the primary data (i.e., audiovisual recordings and fieldnotes from direct observations) was carried out by means of a simplified version of the activity analysis reported in Ginsberg (in press). This previous analysis chartered the possibilities that the program offers in terms of student exposure to French, with special attention to listening comprehension, and the constraints of the computer interface on learner activity. A detailed activity analysis was then carried out, showing a chronological account of what students did. In the present study, a simpler description of what students did was produced by tracking their path in the program along with details about their use of the language help system and of the game interface (e.g., surrogate travel or information gathering).

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[3] Only one group was not interviewed due to schedule conflicts.

[4] See Appendix 2 for table summarizing demographic information on the recorded sessions.

The intimate scrutiny of the possibilities of the interface and of students' activities carried out in previous analyses allowed the researcher to produce a highly informative summary of the students' sessions when watching the videotapes. Revisiting any of the path summaries produced for all the sessions provided a clear picture of what students did in their interaction with the computer and the video, which in turn allowed for easy stylistic comparison. The example below illustrates the kind of information contained in a path summary (for a glossing of its main contents in regular written discourse, please see Appendix 1):

Path summary activity analysis for 7XG1 (group 7X, game 1)

1. intro to story
2. opening scene (revoir: bubble, slow audio)
3. apt a.m. (Figaro; a. machine: play^n 1st msg, sbox, play other msgs; phone: Figaro ads; Figaro; liste des agences)
4. visit apt (f. St. Denis: + carnet notes; sbox)
5. (taken to) rendezvous at 11 / msg? (revoir: bubble, slow audio) Soloniac
6. apt p.m./check? no idea (notes; Figaro) *no a. machine*
7. rendezvous 14:30 at aunt's / request apt? (revoir: bubble) yes / give up? (revoir: bubble) yes
8. apt end of day (no solution)

These summaries inform both what happened and what did not happen given the expectations and possibilities in the program. For example, in the sample above, the students failed twice to offer Philippe an apartment to rent. This opportunity comes up on the screen as a possible response to two questions asked by Philippe in the game segment described in line 7.

In addition to the path summaries, fieldnotes were written during viewing sessions of videorecords. These notes focused on aspects of the students' use of the help system and overall attitude towards the program and on their interactions with the various elements in the learning environment, especially with one another. Stylistic patterns started to emerge as a result of these observations during analysis. It seemed that the type of interaction students had with the various elements in the environment had a marked influence on the effectiveness of *Philippe* as an instructional tool and on the learning environment in general. This analysis is discussed next.

Activating Philippe *as a computer-assisted learning environment*

Research in various disciplines interested in issues of learning has come to accept that cognitive development is at least in part a social phenomenon. In a discussion of various works on cognition, Cole (1991) finds three strands of thought on the question of whether learning is basically an individual or a sociocultural phenomenon. One strand considers "the notion of socially shared cognition an open question" (p. 399). The second strand, "the normative framework," which sees cognition as an inside-the-head phenomenon, has come to agree that "private achievement ... can be markedly facilitated by properly organized social interaction" (p. 402). The third strand "question[s] the sharp distinction between the social and the cognitive" (p. 404). This last line of research shows us that "aspects of cognitive performance that once were attributed to psychological processes within individual children emerge as joint accomplishments between people, that is, as socially shared" (p. 405). There is, in sum, wide consensus among students of cognition that it is productive for people to work together at least in some conditions.

In his discussion of current research on collaborative learning with computers, Light (1993) finds evidence to support the view that computer-assisted learning environments can present such conditions. According to this author, working with one or more partners may make for a more exciting or less threatening task. Efficiency may be enhanced as partners build on one another's ideas, or help one another remember things. Light adds that "we might attribute particular significance to the role of argument and disagreement in shaping learning, or more simply suppose that just *talking about* the problem to someone else helps us to think about it more clearly ourselves" (p. 44).

From the observations of students working at *Philippe*, it soon became evident that they were doing a great deal of work with each other, and that this work was a crucial component in their construction of *Philippe* as a learning environment. More interesting, however, was the observation that students worked together at the computer in markedly different ways. A few categories surfaced as the main aspects which varied from group to group. These categories are presented and qualified below.

Categories of stylistic difference

*I*nvolvement with the game or story refers to the degree to which the students in the group reacted to the plot of the story or to the playing of the game. Even though these are two different things, depending on whether the students related to the program more as a game or as a story, for the present purposes they are considered as equally significant. Highly involved groups had an interest in the characters' personalities and in what would happen to them in the story. These students often put a great effort into making sure that the apartment they were considering was to Philippe's liking, and they tried to do things right within the constraints of the game while persevering towards an acceptable solution. Other groups of students cared less for the characters, their fate, or which solution was found. Some were not even bothered when they failed to reach a solution.

Use of the **help system** refers both to the amount and the type of use that different groups made of the language help system, that is, the various features in the program designed to facilitate understanding of the story and effective playing of the game. Students varied from extensive use of these features to no use of them at all. In addition, while some students used the help system as they would use an audio or video player, others used the more sophisticated features available in *Philippe*, often in resourceful ways, to maximize their comprehension or to retrieve information quickly. For example, when looking for a particular piece of information, some would use the built-in comprehension-checker for quick confirmation of the precise location of that information in the video for replay.

Amount of **exploration** refers to the amount of time the group spent at the station and the type of exploration they did. While some groups hurried through the program without doing much beyond the unavoidable path, others spent time exploring Philippe's apartment or trying to pursue different avenues to solve Philippe's housing problem. Still other groups were focused on working with language comprehension issues more narrowly, and thus did less in terms of visiting apartments or looking for alternative information or courses of action beyond the core path of the program.

Assessment of Philippe in the interview after the game has to do with the group's evaluation of their *Philippe* experience and with their ratings of the validity of spending time at it. Most students did not seem to mind doing the work because of its novelty as a class assignment. However, there were a few, at one extreme, who were highly positive in their evaluation, while at the other extreme there was a pair who strongly disliked the experience. These sharply contrasting assessments are of central importance to this investigation and are discussed in detail in a later section.

Inter-learner **interaction** refers to the degree to which the students in the group collaborated in building their strategy in the game and during decision-making moments, in sharing information and soliciting help in their efforts to cope with the language and the comprehension of the story. In some groups, students were working as a team, in close collaboration in all these aspects, while in other groups there would be collaboration in one aspect but not in others (e.g., information sharing and collaborative scaffolding during intensive listening comprehension efforts vs. unilateral action by a single student at decision-making junctures, which thus involved little inter-learner interaction).

Note that the smoothest type of interaction is not necessarily considered the best here, for conflict-resolution seems to be a potentially positive phenomenon for learning. In fact, a CALL microanalytic study reviewed by Light (1993: 52) suggests that there is a critical role for discussion between learners precisely at conflict points, that is, when there is some kind

Table 1: Possible range of variation according to the categories of stylistic difference

	+1	0	-1
• involvement with game and/or story	very involved	involved to some extent	little or no involvement
• use of help system	very extensive and/or resourceful	extensive, but limited, yet resourceful	very limited and traditional or no significant use
•amount of exploration	long time spent and much exploration	average time spent and some exploration	limited time spent and exploration close to minimum
• assessment of *Philippe* in interview after game	*favorable and/or* enthusiastic	*indifferent or* favorable with reservations	*skeptical and/or* unfavorable
• inter-learner interaction	collaboration across activities	collaboration in some activities	collaboration in few activities and/or limited inter-learner interaction

of mismatch between what a student is trying to bring off and what the partner, or the computer itself, allows or comprehends. According to Light, it is precisely at this point that "the different perceptions of the problem and of the solution have to be negotiated, made explicit and rendered compatible with the ... constraints of the task."

The categories above arise from both the CALL and foreign language pedagogy literature as well as from what are believed to be useful criteria to examine the extent to which students are actualizing *Philippe*'s potential as an effective learning environment. An ideal student group would therefore end up with a positive attitude towards the program, feeling that their time had been well spent either because they thought they learned something or because they had fun. They would also have found a personally satisfactory solution to the problem. To achieve that, they would have done a considerable amount of exploration in order to get to the desired solution or to avoid an undesirable one. This in turn would mean, first, that they comprehended the story, most likely by accessing the language help system, and, second, that they managed to make the game work the way they thought was best. The exact amount of time in each case would depend on their need for and use of the resources available.

In order to come up with a more focused synoptic picture of how each group acted, student game sessions were re-examined according to these categories and qualified as to where their activities figured in a three-point scale for each category (+1, 0, -1). (See Table 1.)

Group ratings according to the categories of stylistic difference

Table 2 shows the result of data analysis according to the criteria and method presented above, and a composite score of the overall utilization of *Philippe*. For those groups with two games, only the second was counted in the computations. This score gives us some sense of the extent to which each group managed to actualize *Philippe*'s potential to create a learning environment. It is not claimed here, however, that these ratings represent what students learned in using *Philippe*.

Table 3 is a continuum of the overall rates of activation of *Philippe*'s potential as a learning environment according to the categories of stylistic difference, showing the overall range of variation among the 12 groups observed.

Tables 2 and 3 reveal a few interesting findings. First, they point to a high degree of interaction among learners during their work with the computer and the video. For most students, therefore, working at the computer was very much a social activity, and not at all a cold and dry experience with a machine as some seem to believe (cf. Light 1993).

In addition, most students did a fair amount of work in interaction with the computer and the video as well, since few groups stayed at the minimal threshold imposed by the software in terms of time and exploration, and only three groups failed to use the language help system to a considerable degree.

As far as the help system is concerned, it seems that the novelty of a number of features often makes them opaque so students may not use them simply because they are not aware of what those features offer, or, in a few cases, because students don't know that the features are available. Evidence from observation and direct report by students indicates that more extensive, hands-on orientation prior to the first game should probably be attempted in order to correct for that.[5]

It was also interesting to see that, overall, students were often not involved with either the game or the story. Correlations among the categories are beyond the scope of this study, but nevertheless it is worthy of note that even though all kinds of compensations occur among the categories, in no case do we find a direct discrepancy (+/-) between a group's involvement and its assessment of *Philippe*.

Speaking more broadly, the different degrees of actualization of the potentials offered by *Philippe* as a learning environment become apparent in the charts above. There are students who, according to the categories, are shown to have had an effective learning experience, while others seem to have been using less of the potential available. This suggests that a computer-assisted learning environment is in fact very complex and that in no way can we be sure that an effective learning environment will exist simply by having the best computer software and the best interactive technology. In the words of Jones (1986: 186, cited in Crookall et al. 1992: 112),

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[5] However, no observed pattern emerged in terms of differential activation of *Philippe*'s potential as a learning environment according to familiarity with computers *per se*.

Table 2: Ratings[6]

group/game	involvement	help system	work done	attitude	interaction	group score
1Xgame G2	1	0	0	1	0	2
2X G2	0	1	1	0	1	3
3X G2	-1	0	0	-1	1	-1
4X G1 & G2	1	1	1	1	1	5
5X G1& G2	0	0	1	1	1	3
6X G1	1	-1	1	?	-1	-2
7X G1	0	0	0	0	1	1
8Y G2	-1	-1	-1	1	1	1
9Y G2	0	1	0	1	0	2
10Y G2	-1	-1	0	0	0	-2
11Y G2	-1	1	0	0	1	1
12Y G2	-1	0	-1	-1	0	-3
category total	-2	1	2	3	6	10

"the value of a computer simulation for communicative language teaching does not lie in the program itself. As with any other piece of teaching material, it depends on what you do with it!"

In addition, the variation we find among these groups of undergraduates in their actualization of *Philippe*'s potential confirms the findings of Light et al. (1987, cited in Light 1993: 48) that "simply putting learners together in front of a computer will not ensure peer facilitation of their learning." In looking at the specific groups more closely, it seems fruitful to compare and contrast the stylistic approaches of groups clustered in different areas of the continuum.

Some similarities can be found in the way groups placed in the extreme positive side of the continuum approached their work at *Philippe* (2X, 4X and 5X). They did a lot of work interacting with the computer and with each other. While 4X could be said to have been following a super-involved mode of operation (which will be analyzed in greater detail later), 2X and 5X were only less enthusiastic, but every bit as hard-working.

To the immediate left of these three highly engaged groups, we find two groups (1X and 9Y) who did a bit less exploration, even though they were also engaged in their work. Both of these groups were perceived to be interacting less collaboratively than they could have been, in the sense that their interaction did not seem to flow easily. The interaction between the two women in 1X seemed to be asymmetric, with one of them making

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[6] Scores for those groups with two games observed show that the overall score either remained the same (2X, 4X and 5 X) or they improved (1X and 3X). This is not surprising, given that in a second game students tend to be more at ease with the interface and with one another. In addition, the tables show that for most students, *Philippe* was a worthwhile experience, with only two groups of students reporting a negative evaluation of the time the spent at it.

Table 3: Continuum

-5	-4	-3	-2	-1	0	1	2	3	4	5
		12Y	6X 10Y	3X		7X 8Y 11Y	1X 9Y	2X 5X		4X

most decisions without really taking the partner into account. Y9 had three members, two males and a female. There was apparent co-membership between the younger male and the female, and a cordial but distant interaction among all three which seemed to preclude a free exchange of ideas. Also, both these groups had problems with the interface. These were independent workers, that is, they were engaged and motivated, but failed to work as a team.

The cluster of groups next to the center of the continuum (7X, 8Y and 11Y) had high levels of interaction, worked collaboratively, but was heterogeneous in the other aspects. 7X was a heterogeneous group whose interaction aimed more at bridging the gaps between the two members than at getting the work done by having two heads thinking together. The two Y-groups were result-oriented, and worked economically to get their task done, but their interaction was different in quality. 8Y was a lively group of three women who were especially interested in the story of *Philippe*. The two women in 11Y were far less involved. This seems related to their contrasting use of the help system (see Table 2).

The four groups towards the negative end of the continuum (3X, 6X, 10Y and 12Y) were all uninvolved with either game or story, and their style could be termed as detached. This should not mean that a causal relation is necessarily implied, because enough contradictory evidence to that can be found in the other groups (see Table 2). 3X was a group of two women who collaborated often, but not always on equal terms, and did a reasonable amount of work, but at a superficial level, with the clear intent of getting the job done. In this they were similar to the groups across from them in the continuum, that is, they did what they were supposed to do in the least amount of time. The two groups to their left were unemotional and worked less than most other groups if we take interaction between learners and computers, and among learners as a composite indication of how much they did. The two women in 6X worked thoroughly with the interface as their main interactional concern, whereas the man and the woman in 11Y rushed through the program, interacting with each other but treating the computer program more as a topic of conversation than as an interactional element. Finally, 12Y, whose work will be examined in detail later, was mostly negative to the extent that one could say that *Philippe* was hardly a learning experience for them.

This reappraisal of the charted approaches across the 12 groups suggests that, despite the similarities in the way groups with comparable actualization scores worked at *Philippe*, they also displayed considerable dissimilarities. It is fairly clear that certain mismatches among individual learners made their joint work unproductive. It is obvious from the analysis offered above that there is considerable variation in the way students approach *Philippe*. It is also apparent that elements outside the students' interaction with the computer are involved in the type of computer-assisted foreign-language learning environment they end up constructing upon using *Philippe*.

However, greater detail is called for in order to qualify the description of the differences in the construction of the learning environment by these different groups based on the stylistic differences discussed so far. As Light (1993: 46) has pointed out, "in order to understand why peer facilitation of learning is sometimes found and sometimes isn't, it is necessary to look more closely at the patterns of interaction involved." The two extreme cases found (12Y and 4X) in the continuum will be the focus of a detailed analysis presented below in order to give a perspective on specific disparate approaches to activating *Philippe*'s CAE potential.

A closer look at two groups

In analyzing the taped interactions which formed the main data corpus for this study, it soon became apparent that students came to the *Philippe* station with quite specific and often contrasting views of what they were going to do, and of how that activity connected to their previous experiences with computers, French, France, video games, lab exercises, and so forth. It was also clear that they often had to recompose their initial attitudes in the face of opposing or sometimes reinforcing aspects of their partner's attitudes. In addition, they had to modify their attitudes as they came up with listening comprehension hypotheses that did not fit with other information they were getting from the computer or the TV screen. Still another element that surfaced in the environment was their teachers, who were never physically present, but who had been ultimately responsible for their being there. To a much lesser extent, students also reacted to the researcher's presence in the room as a guide to the program. The result was often a dynamic microcosm of mutual influences which seemed to be reflected in the ways the groups of students constructed *Philippe*.

In almost all of the groups students negotiated a great deal in order to frame and understand the activities proposed by *Philippe* in a shared way. The complexity of these negotiations depended on the compatibility among the members of each group and their past experiences. Some groups with clear differences seemed to have worked basically through compromises. Groups composed of students of different sexes seem to fall in that category.[7]

In looking at the two groups of young men on the opposite points of the continuum, we see more of a convergence of reinforcing influences between the two group members moving in the same direction towards a joint interpretation of the situation at hand. Consequently, they follow a course of action that is mutually constructed and shared, even though one group's approach looks very different from that of the other.

The two groups to be inspected in detail now are especially apt for comparison. Both groups were composed of two male students with similar foreign language experience. In both cases one partner was slightly older than the other. Yet each group's approach to working at *Philippe* and, especially, their assessment of their experience, could not have been more different. Thus a closer contrastive look at their *Philippe* sessions is motivated not only because we find them at opposite ends of the continuum presented above, but also because it is remarkable that such similar pairs of students (also in terms of sex, age, race, class and nationality) have come away from a couple of hours working together at *Philippe* with such disparate outcomes. Of course we could simply say that one group was motivated and the other was not, but that would be a superficial statement hiding the fact that both groups invested time and energy in *Philippe*, one by working at it in a way that closely matched the ideal projected by CALL materials designers and teachers; the other by rejecting *Philippe* as a learning environment. From observations, both groups were doing what they felt was right to do and worked hard at it.

Strauss' (1992: 1) discussion of the forces behind human motivation, that is, why we do what we do, illuminates our effort to understand why these pairs of students constructed such different CALL environments. Strauss sees human motivation as "the product of interaction between events and things in the social world and things in people's psyches." She stresses that "motivation is dependent on cultural messages and is realized in social interaction" where cultural understandings are constantly negotiated. She also points out that "it is important to investigate the types of experiences that lead people to feel (often without thinking about it much) that a certain course of action is their only reasonable alternative" (p. 13). These conceptions of motivation are appealing because they allow some room for the fact that "rarely, if ever, does the public realm of culture present a single, clearly defined, well-integrated reality" (p. 11). Crucial to understanding the motivations of the two focus groups in the following analysis is Strauss' notion that "members of a society can use the same languages and share exposure to many of the same repeated social messages while differing greatly in the penumbra of associations around their shaped concepts" (p. 12). The following ethnographic report of the two focus groups' actions will reflect just that.

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[7] The groups observed which had members of both sexes (7X, 9Y and 10Y) tended to devote more inter-learner interactional effort at a procedural level not necessarily conducive to smoother learning (e.g., trying not to impose their wishes on their partners). In addition, these students tended to offer different opinions about what they did and how they assessed *Philippe*in the interviews. This is an intriguing area for further research.

Harry (S47), a sophomore, showed up early for his session and approached me while I was in the office next to the *Philippe* station.[8] He had come early to tell me that his partner, to whom he referred as "the kid," would probably not show up and that he would simply work by himself at the other *Philippe* station located elsewhere on campus. That was fine, but, since he stayed, I asked him if he would care to comment on *Philippe* based on the impressions from his first game. He said he had not liked it because it was not interactive (he "couldn't really go places") and that, being "a History person," he favored more traditional teaching programs. "If I knew this was part of this course, I wouldn't have taken it," he added. In the meantime his partner arrived, and they decided to go through the program because they wouldn't be able to meet again to complete their joint assignment on *Philippe*, which was due shortly.

John, (S48) the younger partner in this group, was a special student. He was a high school senior who took French classes at the university because he had apparently taken all the French courses available at his school. However, he did not appear to be any younger than Harry.

In the beginning of their session, Harry and John acted in a self-conscious manner, looking at the camera behind them and referring to their teacher as if she were behind it. For example, before starting their game they talked about the grades they had gotten in a previous assignment and Harry turned around and said to the camera: "I did better than a B, [teacher Y's first name]." Later in the session, Harry asked if I spoke French, and I answered with an ambiguous head movement which he took for a no.[9] He then said in a sarcastic tone: "Oh, I forgot you were going to be a teacher or something." This remark as well as his other references to teachers indicated that this student didn't hold teachers in high esteem.

As I went outside to check the sound recording from the camera located outside the room, I heard them talking about the legality of "being forced to be taped." I came in and told them that they did not have to do it at all, and that they could just tell me to shut the cameras off, or they could go do their work at the other station if they felt like it. They had not realized there was a second camera tape-recording their session, even though they had been told about it and in spite of it being in their full view. So Harry laughed nervously: "This is like the KGB or something. You're listening to what we're saying from somewhere else!" I clarified how I had heard their comment, insisted on turning the cameras off, but they backed off and insisted that the recording go on.

Their session was short (38 minutes) in comparison with the average hour-and-a-half spent by other groups in their class. This included time spent on completing the class assignments, down to the level of the word-ing of the answers. While this was not unusual (the other focus group also did that), their time spent actually working on *Philippe* was relatively limited given their short session. In addition, despite their familiarity with computers, they had problems with the interface, not knowing what to do or how to go about doing what they wanted. I volunteered some information to help them, but they still refused to make use of most of it.

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[8] All proper names used here are pseudonyms.

[9] This was to avoid problems observed in previous sessions (not in the corpus for this study): when told that the researcher understood French, students felt s/he was from the French

There is ample evidence in the recording of this session to conclude that these students rejected *Philippe* and refused to interact with it on its terms. More than that, the interview not only confirms their "hostility against *Philippe*" (a phrase actually used by Harry), but also makes clear that many of their criticisms of *Philippe* were based on (mis)interpretations of incidents in their interaction with the interface (e.g., they never realized that they needed a *complete* address to be able to visit an apartment for rent).

Their interview was extremely revealing, probably for them as well. In fact the interview was almost as long as their game session. During that conversation they gradually acted less aggressively. Initially they gave a thoroughly negative assessment of their time spent at *Philippe*. Based on their second game session, one can easily understand their feeling. What was striking, however, was the way they perceived the game: "The game doesn't work. It's not fun because it's ambiguous. It doesn't know what to do or where it wants to go. It should either be a film where you're a passive watcher or it should be a game, but the way it is is frustrating. In general, it's a bad idea."

In trying to have them be specific about what it was that bothered them, it became clear that their frustration was based on an inability to handle the interface on its terms, that is, within the limits of present-day technology. These students appeared to have felt genuinely betrayed by what they called "the illusion of the game." According to this view, in a real game they should be able to go into a café in Paris and ask people sitting at the next table whether they knew of an apartment for rent, and thus solve Philippe's problem. Although unrealistic expectations of this sort are common among *Philippe* users (e.g., to think that a human-like acting device will in fact answer the telephone and converse with them when they call), it is interesting that these students have gone on record as demanding things that they might have known were technically unrealistic. Furthermore, they blamed their teacher for having said they were going to have a "choose-your-own-adventure experience" with *Philippe* when in fact all they got was frustration. It seems that this strong self-deception (Alexander 1989) was indeed instrumental in maintaining the unity of their temporary bond as peers against outsiders. It legitimized their rating of the overall experience as "very low return for the amount of time spent."

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department or that s/he would help them. When told otherwise, they would go into time-consuming unnecessary explanations when in need of help with the interface or during interviews.

They also spoke at length about how offended they had been at the orientation during class before they were told to work at *Philippe*. They complained bitterly about their teacher "and this woman who also spoke French" (i.e., X, the teacher from the other group) who gave a rushed orientation all in French without having anybody try out anything and who gave short shrift to student requests for clarification.

Although this is a complex picture possibly involving elements outside both the scope of this inquiry and beyond the reach of our data, there seems to be enough indication to conclude that these students did not use *Philippe* as an effective learning environment, and that their placement at the extreme negative end of our continuum is not an artifice of the categories used to analyze their interaction.

It is important to point out that Harry was much more aggressive than his younger partner, John. However, John never disagreed with any of the remarks made by Harry. Quite the contrary, he not only offered support for Harry's points during the interview, but also volunteered his own criticisms of *Philippe*, resenting the time he spent at it.

John's mode of operation, of reinforcing rather than questioning his partner's proposals for understanding *Philippe*, is not surprising given his position vis-à-vis Harry: John is clearly academically-oriented, and he is also the only high-school student in an advanced university-level French class. Here we see him working together with a fellow male student majoring in an academic discipline (History). It seems John was bound to emulate Harry's behavior, especially when we can safely assume that John aspired to being a member of a peer subculture of intellectual-type college students. This scenario ties in with Corsaro and Eder's (1990: 209) research on peer cultures, according to which "the main concerns of the peer culture of students from middle-class backgrounds are closely tied to visible school activities and to the dynamics for obtaining peer status."

Harry's actions also make sense when we look at them with these peer culture concerns in mind. According to Corsaro and Eder (1990: 214), the central themes in peer cultures involve "[a] the importance of sharing and social participation, ... [b] attempts to deal with confusions, concerns, fears, and conflicts in their daily lives, ... [and c] resistance and challenging of adult roles and authorities." Harry had had considerable experience in French, but this was his first college French course. He had a patronizing attitude towards John, whom he referred to as "the kid from the suburb." So he was, on the one hand, John's senior and his socializer into urban college life (they also sat next to each other during the class meeting observed). On the other hand, he was John's peer, sharing some of the insecurities of being in this French class with a teacher they didn't seem to trust. His restlessness regarding teacher figures was possibly related to his recent decision to major in History, and the probability of becoming a teacher himself. Finally, his "cool rebelliousness" echoes Corsaro and Eder's remark that "the resistance of adult rules and authority provides children with a sense of control and autonomy, and for this reason such resistance may be a universal feature of peer culture" (p. 215).

These students jointly built a cultural construct which rejected *Philippe* as a questionable, untrustworthy instrument that justified rebellion, first, against their teacher, who gave Harry a grade below what he believed he deserved; second, against teachers in general (thus schools), who did not teach them all they needed in order to perform as expected, and then forced them to perform while watching behind their backs; and finally, against technological attempts at sophistication in teaching which promise more than they can deliver. Their limited activation of *Philippe* as a learning environment makes sense when seen from this angle. While we could arguably find elements that reinforced their motivation to construct *Philippe* as a hoax, as their rushed orientation or their classroom experience, more powerful forces shaping their rejection of *Philippe* seem to be the cultural models (Strauss 1992) that they brought into the room, and the amalgam of emergent influences in the interactions during their sessions, especially their inter-learner interaction driven by peer culture concerns.

Let us now look at our CALL success story at the other end of the continuum. Brian (S29) and Gordon (S30) were, respectively, a sophomore majoring in finance and a freshman who had not yet decided his major. Brian was thus Gordon's senior, like Harry was John's senior. Both Brian and Gordon have similar background experience as foreign language learners: they both had Latin in high school, 5 years of French in school and they were both taking their first French course in college. Brian had also studied Hebrew and Russian, while Gordon had spent time in France. The result of their similar experiences but different interests surfaced in their conversations during listening efforts at *Philippe*: While Brian's forte was associations and vocabulary, Gordon was strong on sound recognition and was more acquainted with French cultural aspects.

Brian and Gordon spent more time at *Philippe* than any of the other groups. In their first game session, they got involved in the game to such an extent that they ran out of time before they were halfway through it, so they expressed their wish to schedule another session the next day. They were the only group that did that. In this second session to complete their first game, they actually played the second part of the game twice, because they were not happy with the ending they came up against in their first attempt. In their second game, when they had a specific task, they were one of the few groups that made a point of getting to the end of the story, even if they didn't have to do that to complete the assigned task. In the first interview Brian said: "We came back here because we thought it'd be cool to finish, not because of her assignment. We only had to spend half an hour. But the longer you take, the more you get out of it."

These two students not only spent a lot of time at *Philippe*, they also interacted intensively with the interface both by using the language help system and by exploring the various options for visiting places and gathering information. In addition, the two interacted intensively with each other during most of the time they spent together in front of the *Philippe* station, collaborating in dealing with the interface, in devising strategies and making decisions in the game, and in sharing information for comprehension. Moreover, they seemed to be having genuine fun during most of the time they spent at *Philippe*. In the interview they felt that it was a good thing to have done it together. "We helped each other. Yeah, we were a good team."

Their assessment of *Philippe* contrasted sharply with the assessment given by Harry and John in almost every respect. Brian and Gordon were excited about doing *Philippe* from early on in their first session. They had good things to say just about everything in *Philippe* after their first game was completed. Brian said he hoped there would be other programs like it in the future. Gordon said they had become so involved with the game that they forgot to write notes, referring to the fact that they had to report in class what scenes they had seen. The following excerpt from this interview gives us a sense of how they perceived their experience.

> B: once we got here, I never thought about what she [their teacher] said.
> G: it was a good game. that's what it seemed like. it didn't seem like an assignment, it seemed like, you know, you sit down and play computer games all the time.
> B: yeah.
> G: it seemed like a big treasure-hunt type thing
> B: when we didn't get him the apartment, it was "oh, we lost!"
> G: we bummed — it was so (wild)
> B: and now we won, cause we got him his girlfriend and everything.

They repeatedly said they liked the game and the story, especially for the fact that it became clear that different things happened depending on what they did. They actually referred to *Philippe* as "cool — like a choose-your-own-adventure," that is, by using exactly the same analogy that Harry and John used to describe what *Philippe* failed to be for them.

One could easily picture Brian and Gordon as overzealous students whose concerns are just the opposite of Harry and John's, and that this would explain why the two groups used and reacted to *Philippe* so differently. However, the similarities between the two groups are too big to warrant such an explanation, also because Brian and Gordon do not fit the stereotype of hardworking student. Rather they were both acting according to the same peer culture concerns as Harry and John. The crucial difference between the two cases, however, was that the integration of the cultural models Brian and Gordon brought together when they interacted with each other and with *Philippe* constructed *Philippe* as something "cool" and favored working intensely at it.

Aspects of resistance to adult rules are present in their interaction, as can be seen in Brian's insistence that the reason why they came back for a second session to complete the first game had to do with *their* decision, and not with what the teacher had assigned. In addition, their conversations before and after the games were revealingly filled with adolescent concerns. For example, having no apparent reason to mention such a thing, Gordon came in the room and sat down for his second game and said: "Gosh, I just had the best cigarette in my whole life." Another telling element was their constant cursing ("She got all fucking pissed!") throughout the tape-recorded sessions. In the second game session, Gordon came in with a black eye from a game on the weekend. Although that was hardly noticeable, his attempt to conceal it actually made it a topic of conversation twice. Many other conversation gambits between the two revolved around such issues marking a "behaved defiance" of adult behavior.

A crucial factor legitimizing Gordon's interest in spending time at *Philippe* was the fact that he reportedly lived with his French girlfriend, a topic of conversation that came up both in the interviews and in the students' conversations. So here was an undergraduate, a freshman, who lived with his French girlfriend and who therefore had a peer-culture legitimate "need" to improve his French. Given that *Philippe*'s storyline revolves around a problem between Philippe and his girlfriend, Gordon's high level of motivation to work at *Philippe* was unimpeded by any concerns about a possible scar to his reputation as a cool, independent, sports-oriented, popular guy.

Brian was not the same type of guy, and in the very beginning of their first session, Gordon acted condescendingly towards him. Brian would say things like: "I didn't understand that, did you?" And Gordon would answer: "Yeah, this is fast and she is from the South," claiming not only to have understood the words but also to have identified the accent and therefore implying that Brian was not as sophisticated a listener as he was. However, Brian was persistent. As a result, it soon became clear that, despite his poorer listening proficiency, in terms of global comprehension, he was indeed as sophisticated as Gordon, only their fortes were in different specific skills. Less than 15 minutes into their first session, this became a shared understanding, as Gordon gradually changed his attitude towards Brian's listening comprehension doubts and questions. Soon they were interacting vibrantly, as if they were playing a game, with exuberant compliments ("You go, dude!!") and expressive nonverbal behavior like touching palms when they did something remarkably well, as if celebrating a scored point.

In the course of the subsequent sessions, Brian's more traditional expertise as a foreign language learner became more and more useful and thus respected by his partner. For example, he would often pick up flaws in Gordon's reasoning, with resulting clarification of words heard incorrectly or he would read the written information on the screen and help with words that Gordon was not familiar with. He therefore did not have to act *like* Gordon to contribute to their team effort. He did not have to oppose Gordon's less orthodox style in any way either, because it did not clash with his, nor did it come in the way of his own motivation to work at *Philippe* to practice or improve his French. In fact, it seemed that the interaction at *Philippe* conferred Brian with some prestige before a peer belonging to a subculture that was probably different from his own, since his knowing French ("See, I do know a little French!") was a clearly desirable attribute in Gordon's cultural model.

It thus seems that the chemistry was right between Brian and Gordon in the sense that the two produced a common construct of *Philippe* in which it was "cool" (i.e., acceptable and prestigious) to work at it and to explore it. In this unimpeded motivation to explore *Philippe*'s potential, they reinforced each other's interest in getting involved in *Philippe* as a game and to some extent also as a story. This in turn led them to use the help system so that they could play to win, and to explore a lot to learn more about the story. Their interaction with the computer was thus intense and profitable leading to their positive assessment of it. The overall result was that they constructed an effective learning environment in using *Philippe*.

The chemistry was also right between Harry and John, if we look at it from a peer culture perspective. Unfortunately, the workings in their interaction did not enable them to turn *Philippe* into an effective learning environment and made them frustrated with it. Their pay-off was probably in the re-assurance that their expectations were indeed borne out in their experiences as they saw them. Harry probably felt he had been right about all his points; after all, he got only a B+ for a final grade in the course, even if his teacher said "he could have done much better."

Concluding remarks

The analyses presented above point to the enormous complexities involved in the construction of environments for cognitive development. The wide range of variation in the way different groups of students used *Philippe* shows the vast potential of multi-media technology in foreign language instruction. However, it also makes it evident that, if we must understand computer mediated learning as a promising new route to disperse knowledge and improve performance, we must also see it as something which depends, for its effectiveness, on a complex array of elements beyond the technology that is used.

Since cognitive development is a shared phenomenon, cultural aspects must be taken into consideration if we want to understand how learners may profit from a computer-assisted environment. The analyses above have shown that issues having to do with the learners' cultural models and the peer cultures they inhabit may have a decisive culture in the shaping of these learning environments in interaction. Moreover, the fact that we have looked at learners who share similar background categories, and yet construct their computer-assisted learning environment so differently, suggests that looking exclusively at the computer may obfuscate other important elements in computer-assisted language-learning situations.

The present study is limited in scope since it does not examine in greater detail the interaction between teachers and learners nor the interaction among learners outside class activities. However, it presents a small contribution in heeding Crookall et al.'s (1992: 94) call for "accurate and detailed descriptions of the [CALL] phenomena," confirming these authors belief that "In CALL activities, understanding the meaning of the events for the participants themselves (quality/process) is vital in any systematic attempt to define and assess the effectiveness of those activities (quantity/product)" (p. 114).

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Appendix 1

Glossing:

line 1 — These students used the help system to acquire top-down information for comprehension of the story (e.g., who the characters are) before they started watching it .

line 2 — After watching the opening scene, they used the language-help system to review it by watching and listening to segments of their own selection both on regular and articulate (slow) audio tracks.

line 3 — In exploring Philippe's apartment in the morning, they looked at the classified ads (Figaro), listened several times to the first message in Philippe's answering machine (directly related to their assigned task to recount one message for each part of the day) and only once to the other messages. Then they tried to call the people offering apartments in the classified ads, reviewed classified ads once again, and then checked the list of real estate agencies.

line 4 — Using the surrogate travel function, they visited an apartment for rent, writing extensive notes about it, and then they looked at the suggestion box for some information about the interface.

line 5 — They ran out of time and were forced to meet Philippe as arranged at 11 o'clock (game time); when asked by Philippe about any messages in his answering machine, they accessed the language-help system to watch the question being asked again with both regular and articulate audio, and then they told Philippe that Mme. Soloniac had called.

line 6 — Upon returning with Philippe to his apartment they responded to his question about the location of the check to pay the plumber by saying they had no idea where it was, a problematic and unusual reply. After the plumber left without fixing the leak in the sink, they looked at Philippe's note with his aunt's address and at the classified ads, but did not listen to the answering machine, an indispensable activity to get information leading to a few of the possible solutions of the game.

line 7 — They chose to go to Philippe's aunt's apartment. When Philippe asked for their advice on whether or not to ask his aunt if he could stay in her apartment, they first accessed the help system to listen to his question again, and then told him to go ahead and ask her. When Philippe asked whether he should give up, given his aunt's reaction, they once again resorted to help system to review his question, and then told him to abandon the idea.

line 8 — They then followed Philippe back to his apartment at the end of the day, and watched the final scene in which Philippe faces the failure which is also the students'.

Appendix 2

group	session record	student ID, sex	class	major	French as FL instruction	other FL experience	experience in France
1X	1 & 2	S22, F	SR	Chem	4 yr HS, 2 sem U	-	-
		S23, F	ES	Fr.en	?	Korean NS	visit as child
2X	1 & 2	S24, F	JR	Econ	4 sem U	Urdu NS,	-
		S25, F	JR	Bio-chem	2 yr HS, 2 sem U	Taiwanese NS	yes, without NS contact
		S26, F	SO	Art Hist	2 yr HS, 2 sem U	-	-
3X	1 & 2	S27, F	JR	Econ	4 yr HS	Spanish	2 wk holiday
		S28, F	SO	Bio-chem	4 sem U	Hindi NS, Arabic	1 mth w/ own family
4X	1 & 2	S29, M	SO	Finan	5 yr HS, 1 sem U	Russ 3 sem, Lat, Hebrw	1 wk w/ class
		S30, M	FR	undec	5 ys HS, 1 sem U	Latin	6 mth on/off w/NS
5X	1&2	S31, F	SO	n/a	4 yr HS, 2 sem U	Spanish, Latin	6 wk (3 w/ NS)
		S32, F	SO		6 yr HS, 1 sem U	-	1 wk
6X	1	S33, F	FR	undec/ Fren	4 yr HS	-	-
		S34, F	SO	Psych	4 yr HS	Spanish NS	-
7X	1	S35, F	SO	undec	4 yr HS, 2 sem U	-	-
		S36, M	JR	Busin	2 yr HS, 2 sem U	Polish NS, Germ 1 yr	summer w/ Fr family

(Appendix 2, continued on next page)

Appendix 2, continued

group	session record	student ID, sex	class	major	French as FL instruction	other FL experience	experience in France
8Y	2	S37, F	SO	Hist	3 yr HS, 3 sem U	Latin in HS	summer w/ NS
		S38, F	JR	Bio	4 yr HS, 3 sem U	Latin in Middle Sch	3 wk (1 w/ NS)
		S39, F	SR	Eng	4 yr HS, 5 sem U	-	summer w/ NS
9Y	2	S40, F	FR	undec	6 yr HS	Span 3 yr	
		S41, M	SO	Hist/IR	3 yr HS, 2 sem U	-	
		S42, M	FR	undec	5 yr HS	Hebrew	
10 Y	2	S43, M	JR	undec	3 yr HS, 1 sem U	Arabic	summer w/ NS
		S44, F	SO	undec	3 sem U	Korean	7 wk w/NS
11 Y	2	S45, F	FR	undec	4 yr HS	Latin 3 yr	6 wk (1 w/ NS)
		S46, F	FR	undec	4 yr HS	Gujarati NS, Latin 2 yr	1 mth w/ own family
12Y	2	S47, M	SO	Hist	6 yr HS	Hebrw 4 yr	1 mth
		S48, M	HSSR	n/a	5 yr	Hebrw 3 yr, Indonesian 1 mth	1 mth +hosted Fr. Student 1 mth

NS = native speaker; ES = exchange student; SR = senior; JR = junior; SO = sophomore; FR = freshman; HS = high school; U = college; FL = foreign language

"Could You Calm Down More?": Requests and Korean ESL Learners

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This study examines the ways in which adult Korean ESL learners perform one speech act, the request, with particular attention to deviations caused by negative transfer. For this purpose, an oral discourse completion test including six request situations was given to three groups; one group of native American English request responses was used as baseline data while one group of Korean subjects served as nonnative English respondents and another group of Korean subjects served as native Korean respondents. In all three language groups, request realizations (directness levels and supportive moves) are significantly determined by the sociopragmatic features of the situational context. However, nonnative speakers deviated from native English speaker norms in some situations due to the effect of the pragmatic rules of Korean.

Research in interlanguage pragmatics has shown that even advanced learners' speech act performance commonly deviates from target language conventionality patterns and may fail to convey the intended illocutionary point or politeness value (e.g., Cohen & Olshtain 1980: 113-134; Wolfson 1989; Takahashi & Beebe 1987: 131-155; Blum-Kulka, House & Kasper 1989; Edmonson & House 1991: 64). Among the various attempts to account for both the underlying processes and communicative effects of such pragmatic deviations, research on negative pragmatic transfer has played a significant role in explaining the formation of interlanguage (Takahashi & Beebe 1987: 131-155; Wolfson 1989; Kasper 1992: 203-231).

It is the purpose of this study to examine the ways in which adult Korean ESL learners perform one speech act, the request, with particular attention to deviations caused by negative transfer. Requests are a frequent and useful speech act, permit a wide variety of strategies, and have high social stakes; for those reasons they are important for second language educators and others involved in cross-cultural communication. Although requests have frequently been studied, it is important to find out about requests in language groups which have not been studied.

Request Schema

Requests are pre-event speech acts which affect the hearer's behavior. Previous studies of requests in several languages have revealed the universal richness available in the modes of performance of a request and the high communicative and social stakes involved in the choice of a specific request form (Ervin-Tripp 1976: 25-66; Brown & Levinson 1987). In order to understand the interlanguage pragmatics of requestive behavior, we must first consider the linguistic, social, and cultural types of information on which speakers rely in comprehending and producing requests.

According to Blum-Kulka (1991: 64), the motivational, intentional source of the request is the *requestive goal*, which speakers strive to achieve with maximum effectiveness and politeness. Requests vary in goals from the least coercive requests (e.g., asking for information, permission, goods, etc.) to the most coercive (e.g., action). In choosing the means by which to perform the request, *effectiveness* is important. An effective request is one in which the hearer clearly recognizes the speaker's intent. However, effectiveness can conflict with *politeness* (Blum-Kulka 1991: 64; Brown & Levinson 1987). For example, the request "Drive me home" may be the most direct and therefore, effective way to perform a request, but it would certainly not be considered the most polite way in most contexts. On the other hand, the most indirect way of performing a request is not necessarily the most polite one (Blum-Kulka 1991: 64; Brown & Levinson 1987).

The decision to perform a specific requestive goal is subject to a *cultural filter* (Blum-Kulka 1991: 64). For example, requests for information concerning age will be acceptable in Korean culture but taboo in other cultures. The degree of imposition involved in a specific request for action (illocutionary act) will also be weighed in culturally relative ways, and in turn might lead to its avoidance or affect its mode of performance.

In her research on requests, Blum-Kulka (1983: 36-55) indicated that although there are some rules that do seem to be less language- and culture-specific than others, one of the major problems confronted by L2 learners deals with the inappropriate transfer of sociolinguistic rules. In arguing against the universalist hypothesis,[1] Blum-Kulka states:

> Contrary to such claims, I would like to argue that the nature of interdependence among pragmatic, linguistic, and social factors that determine speech-act realization varies from one language to another, and that as a result, L2 learners often fail to realize their speech acts in the target language both in terms of effectiveness and in terms of social appropriateness (Blum-Kulka 1983: 38).

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[1] Fraser (1978: 1-21) has claimed that the strategies for performing illocutionary acts are essentially the same across languages. He uses the term "strategy" to refer to "the particular choice of sentential form and meaning which the speaker employs in order to perform the intended act" (Fraser 1978: 12).

L2 learners' request performance often violates norms of appropriateness due to negative transfer, but sometimes differs from both native and target language usage due to interlanguage development (Kasper 1992: 203-231).

The broadest study on requests to date has been the Cross-Cultural Speech Act Realization Project (CCSARP) (Blum-Kulka, House & Kasper 1989). The aim of this study was to compare speech act realizations of native and non-native speakers under different social constraints across seven languages (Australian English, British English, American English, French, German, Danish, and Hebrew). Data were elicited by means of a discourse completion test (DCT).

The findings of CCSARP that are pertinent to the present study are as follows:

1) Learners vary the strategies used by situation, and

2) Learners vary the type and quantity of external modification by situation.

Situational variability in choice of directness levels can link L2 learners with their L1. In CCSARP data (House & Kasper 1987: 1250-1288) Germans used the most direct level far more frequently than native British English speakers in two situations—in the case of a policeman asking a driver to move her car ('Policeman request') and the case of asking a roommate to clean the kitchen ('Kitchen request'). The researchers claimed that the German learners' usage of imperatives is most likely a result of negative transfer from their native language into their English interlanguage.

On the other hand, it has been claimed that certain deviations of interlanguage request performance, such as overelaboration in the use of supportive moves, persist regardless of mother tongue. It has been hypothesized that learners are more verbose than native speakers because learners try to compensate for their language difficulties by adding a great deal of unnecessary information (Blum-Kulka & Olshtain 1986: 47-61; House & Kasper 1987: 1250-1288; Edmonson & House 1991: 64).

Although the CCSARP was a comprehensive study of request realizations, there are two major shortcomings that need to be addressed. First, the researchers failed to include other languages and cultures in their data. Perhaps the language groups used as subjects for CCSARP were the most pertinent subjects of study for the researchers and their respective locations. However, for ESL instructors in the United States, it is extremely important to learn more about the groups of international students who make up a large portion of local enrollment. Students from Japan and Korea usually make up the largest groups in intensive English programs across the United States. Although some research has been done concerning Japanese learners and speech acts (Takahashi & Beebe 1987: 131-155; Beebe & Takahashi 1989; Beebe, Takahashi & Uliss-Weltz 1990), research is needed in the area of Korean learners of English and their speech act realizations.

Second, although DCTs allow the researcher to gather large amounts of data quickly and control for specific variables of the situation, data collected in this manner cannot produce all the information needed about the ways in which speech acts are performed; writing an answer permits more time to plan and evaluate than does orally performing the speech act. Indeed, DCTs have underlying limitations which make it impossible to collect the kind of elaborated behavior found in oral speech (Wolfson 1989; Beebe & Cummings 1994).

The specific questions addressed in this study are the following:

> 1) Under varying social constraints, how do advanced Korean learners of English compare to native American English speakers in request realizations—or more specifically, in directness levels and external modifications?
>
> 2) By including a comparison of Korean subjects requesting in English and subjects requesting in Korean, will there be any evidence of negative transfer? If so, under what contextual conditions?

Method

Two groups of subjects participated in this study. One group consisted of 25 native Korean speakers (13 male, 12 female) who were enrolled in high intermediate to advanced level ESL classes or as graduate students in a university in Philadelphia. A high intermediate to advanced group of learners was chosen with the expectation that they would have a larger linguistic repertoire and be more sensitive to the subtleties of English pragmatics than would be less advanced learners. The Korean-speaking subjects ranged in age from 21 to 30 (average age 24) and length of stay in the United States ranged from 1 month to nine months. The other group comprised 15 native speakers of American English, 8 male and 7 female, who were enrolled in various graduate programs. The range of this group was 23 to 30 (average age 24).

In order to set up norms for "acceptable" requests, the subjects were divided into three groups. The Americans served as informants for native English speakers' requests, 10 of the native Korean speakers served as informants for requests in comparable situations in Korean, and the remaining 15 Korean speakers served as the nonnative speakers requesting in English and the main focus of this study.

Data Collection

The task consisted of an oral discourse completion test (composed for purposes of this study) with six situations each of which was designed to assess pragmatic competence among nonnative speakers of English. They included

1) asking a professor for an extension,

2) asking a friend to lend you money,

3) asking the waiter to take back an order,

4) asking a neighbor to turn down his/her music,

5) asking your boss to let you out of work early,

6) asking a little boy to go to sleep.

These situations vary in terms of the interlocutors' role relationship, i.e., on the dimensions of: dominance (professor/boss higher status than respondent; friend/neighbor at same status; waiter/little boy at lower status) and social distance (a neighbor or waiter being least familiar and a friend being most familiar), interlocutors' rights and obligations, and degree of imposition involved in the event. The full text of the situations appears in Appendix A.

The investigator first read the instructions out loud in English and then each subject was asked to read silently the six situations which were typed onto file cards in the appropriate language. Each subject was then asked to respond to the verbal cue issued by the investigator. Responses were tape-recorded and then transcribed

Data Analysis

The major aim of data analysis was to compare the request realizations of nonnative English speakers (Korean) to native American English speakers and also trace any patterns of transfer from native Korean speakers. The CCSARP (Blum-Kulka, House & Kasper 1989) coding scheme for requests served as a point of departure in setting up ways in which to analyze directness level and external support on the basis of the responses by all subjects:

1. **Directness Levels**: The CCSARP coding scheme identifies the following types or requests, according to their level of directness:[2]

A. **Mood derivable** (the grammatical mood of the verb signals the illocutionary force)

-Go to sleep!

B. **Performative** (the illocutionary force is either explicitly named or modified by hedging expressions)

-I'm requesting that you give me some extra time.

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[2] According to the CCSARP coding scheme, Performatives are split into two groups—Explicit and Hedged—and Hints are seperated into—Strong and Mild. Due to the small number of participants in this study, Explicit and Hedged Performatives will be listed under Performatives and Mild and Strong Hints under Hints.

C. **Locution derivable** (the illocutionary force is derivable directly from the semantic content of the request)

-I think you'll have to bring this back.

D. **Suggestory formulas** (a suggestion to do the action)

-How about going to sleep?

E. **Preparatory** (reference to preparatory conditions such as ability or willingness)

-Can you lend me money?

F. **Hint** (partial reference to the object or element needed for implementation of the act or no reference but still interpretable as request through context)

-I had ordered this to be well-done.

2. **External modification**: In externally modifying a central speech act, a speaker chooses to aggravate or mitigate her request by using specific types of supportive moves. Examples of aggravating supportive moves are threats or insults. Since they occur very infrequently in the data, aggravating supportive moves will be disregarded in this study.

The following mitigating supportive moves (Blum-Kulka, 1983, House & Kasper, 1989) were found in the data of the present study:

A. **Preparator**. (the speaker prepares his or her hearer for the ensuing request)

-I have a request to make.

B. **Getting a precommitment**. (In checking on a potential refusal before making his or her request, a speaker tries to commit his or her hearer before telling him or her what he is being requested)

-Could you do me a favor?

C. **Apology**. (Although not found in the CCSARP coding scheme, apologies were included as an example of a mitigating supportive move because of the frequent occurrence in the data and also quite simply because apologies mitigate the ensuing request. By apologizing, the speaker acknowledges that s/he is making an imposition on the hearer and expresses his or her regret.)

-I'm sorry, but...

D. **Grounder.** (The speaker gives reasons, explanations, or justifications for his or her request, which may precede and/or follow it.)

-I'm trying to study for an exam.

E. **Disarmer.** (The speaker tries to remove any potential objections the hearer might raise upon being confronted with the request.)

-I know you don't like this, but...

F. **Promise of reward.** (To increase the likelihood of the hearer's compliance with the speaker's request, a reward due on the fulfillment of the request is announced.)

-I'll make it up to you.

The data analysis included both identifying pragmatic deviation from native patterns of apology and investigating whether the deviation would likely be the result of negative transfer from patterns in the native language.

Table 1
Situation 1: Professor's Office

Directness Levels	Native English N	Native English %	Non-native English N	Non-native English %	Native Korean N	Native Korean %
1. Mood Derivable	0	0	1	6.7	1	10
2. Performative	3	20	0	0	0	0
3. Locution Derivable	0	0	0	0	0	0
4. Want Statement	1	6.7	1	6.7	1	10
5. Suggestory Formula	0	0	0	0	0	0
6. Preparatory	11	73.3	12	80	8	80
7. Hints	0	0	1	6.7	0	0
Supportive Moves[3]						
1. Preparator	8	53.3	0	0	0	0
2. Precommitment	0	0	1	6.7	0	0
3. Apology	2	13.3	7	46.7	5	50
4. Grounder	14	93.3	13	86.7	9	90
5. Disarmer	1	6.7	0	0	0	0
6. Promise of Reward	0	0	1	6.7	0	0

+dominance -social distance

Results

The results of each of the six situations are summarized in Tables 1 to 6. In Table 1, it is apparent that all three groups tend to concentrate on level 6=Preparatory conditions (*Could you give me an extension?*). On closer examination, however, the quantitative data presented here does not describe the vast difference between native and non-native speaker forms within the level of Preparatory conditions. Although native and non-native English speakers used the same level of directness, native speakers further mitigated their requests by using internal modification plus routinization. Native speakers commonly used phrases like: *I was wondering if I could get an extension on the due date...*or *Would it be possible to get a few more days to write my paper?* while Preparatory requests of the type: *can/could you do X...?* were heavily routinized in nonnative speaker behavior.

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[3] Each respondent may have used none, one, or more than one supportive move. Each type of move used by the respondents has been accounted for. Therefore, totals in this section will not necessarily equal 100 percent.

Table 2
Situation 2: Money

Directness Levels	Native English		Non-native English		Native Korean	
	N	%	N	%	N	%
1. Mood Derivable	2	13.3	2	13.3	2	20
2. Performative	0	0	0	0	0	0
3. Locution Derivable	0	0	0	0	0	0
4. Want Statement	1	6.7	2	13.3	1	10
5. Suggestory Formula	0	0	0	0	0	0
6. Preparatory	12	80	11	73.3	7	70
7. Hints	0	0	0	0	0	0
Supportive Moves						
1. Preparator	0	0	0	0	0	0
2. Precommitment	1	6.7	0	0	0	0
3. Apology	0	0	0	0	0	0
4. Grounder	7	46.7	13	86.7	8	80
5. Disarmer	0	0	0	0	0	0
6. Promise of Reward	5	33.3	5	33.3	3	30

+dominance -social distance

As for external modifications, 53% of the native English speaking subjects used Preparators while neither of the two Korean groups used Preparators at all. All three groups used Grounders as a common supportive move. However, native speakers had more of a tendency to use Grounders both before and after the head act (*I have this mandatory FTX session this week which is part of my ROTC scholarship. Is there any way I could get an extension on my paper? I really don't think I'll have time to write a paper with this kind of commitment*). Additionally, nonnative speakers and native Korean speakers used more Apologies in their requests than did the native English speakers.

In Situation 2, the requester is not endowed with a "contractual" right to make his or her request, just as the requestee is by no means obligated to comply with it. On the other hand, since borrowing money is a common transaction among best friends (and does not constitute a face-threatening act) the request may be performed without an abundance of politeness. Speakers from all three groups occasionally used the most direct level (*Give me some money.*)[4] Most respondents chose to use the Preparatory requests of the type: *Can/could you...?*

The request may be performed without a high frequency of supportive moves. All three groups used only Grounders and Promises of Reward. However, nonnative speakers and native Korean speakers used Grounders more than native English speakers did.

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[4] Only male subjects in all three groups used imperatives in this situation.

Table 3
Situation 3: Restaurant

Directness Levels	Native English		Non-native English		Native Korean	
	N	%	N	%	N	%
1. Mood Derivable	0	0	1	6.7	0	0
2. Performative	0	0	0	0	0	0
3. Locution Derivable	1	6.7	0	0	0	0
4. Want Statement	0	0	0	0	0	0
5. Suggestory Formula	0	0	1	6.7	0	0
6. Preparatory	7	46.7	9	60	8	80
7. Hints	7	46.7	4	26.7	2	20
Supportive Moves						
1. Preparator	0	0	0	0	0	0
2. Precommitment	0	0	0	0	0	0
3. Apology	0	0	1	6.7	1	0
4. Grounder	12	80	14	93.	9	9
5. Disarmer	0	0	0	0	0	0
6. Promise of Reward	0	0	0	0	0	0

+dominance -social distance

In Situation 3, the requester (customer) has authority over the requestee (waiter). In addition, the requester has a definite right to make his or her request. Consequently, it is both unlikely that the request will be perceived as an imposition by the requestee and as a particularly difficult undertaking by the requester. In such a situational environment, it would seem likely that the subjects would feel licensed to use imperatives, but on the contrary, all three groups conformed to the usage of the least direct strategies—Preparatory and Hints. The nonnative English group commonly used the same pattern as the native English group—*Can/Could you...?* However, two of the native speakers began their requests with the consultative device—*Do you think you can...?* whereas none of the nonnative speakers used this form. Although nonnative speakers used almost the same amount of Hints, native speakers again differed in their request structure. While nonnative speakers used simple strong hints—*I ordered steak to be well done—*, some native English speakers began their strong hints with—*I think/believe I ordered this to be well done.*

Due to the varying social factors of this specific situation, the request may be performed by speakers without their using an abundance of supportive moves. In all three groups, most subjects used only Grounders for each request.

In Situation 4, the request is highly face-threatening act in both English and Korean, because the requestee has no fixed obligation to fulfill it, and the requester and requestee are non-intimates. However, the next door neighbor is disturbing the requester; thus the requester has a definite right

Table 4
Situation 4: Loud Music

Directness Levels	Native English		Non-native English		Native Korean		
	N	%	N	%	N	%	
1. Mood Derivable	0	0	4	26.7	0	0	
2. Performative	0	0	1	6.7	0	0	
3. Locution Derivable	0	0	0	0	0	0	
4. Want Statement	5	33.3	1	6.7	4	40	
5. Suggestory Formula	0	0	0	0	0	0	
6. Preparatory	10	66.7	9	60	6	60	
7. Hints	0	0	0	0	0	0	
Supportive Moves							
1. Preparator	0	0	0	0	0	0	
2. Precommitment	1	6.7	1	6.7	0	0	
3. Apology	2	13.3	2	13.3	3	30	
4. Grounder	15	100	15	100	10	100	
5. Disarmer	0	0		0	0	0	0
5. Promise of Reward	0	0		1	6.7	=0	0

-dominance +social distance

to ask the neighbor to turn down the music. Taking all of these factors into consideration, the requester must be able to be polite yet show his or her displeasure firmly. Nonnative English speakers were more direct in their requests than were both the native English group and the native Korean group. This deviation from both groups might signal a lack of grammatical proficiency on the part of the non-native English group. Among the native English speakers, 33% used Level 4=Want Statement and phrased their requests similarly: *I would appreciate it if you'd turn it down.* The remaining 67% requests at Level 6=Preparatory Conditions and used the routine: *Do you mind turning down the music a little?*

The native Korean group also used Want Statements (*It would be nice if you lowered your music.*) and Preparatory Conditions (*Could you calm down more?*). However, in the nonnative English group, only one subject used a Want statement whereas 27% requested at the most direct level=Mood Derivable (*Please turn down the music*). Although the requesters are being disturbed, this use of imperatives might seem rude to a native English speaker. In contrast, nonnative speakers' usage of Preparatory Conditions was similar to that of native speakers (NNS=60%, NSE=67%). However, nonnative speakers failed to show their displeasure clearly by using the routine *Can/Could/Will you...?* instead of *Do you mind...?* Although *Do you mind...?* is considered a mitigator on the internal level, in this type of situation it can show that the speaker is not happy with the actions of the hearer.

In some cases nonnative speakers are either too forceful and in others not forceful enough. The cause of these deviations might be due to their unfamiliarity with the routines: *Do you mind if..* and *I'd appreciate it if...*

Table 5
Situation 5: Getting Off Work Early

Directness Levels	Native English		Non-native English		Native Korean	
	N	%	N	%	N	%
1. Mood Derivable	0	0	1	6.7	1	10
2. Performative	0	0	0	0	0	0
3. Locution Derivable	0	0	0	0	0	0
4. Want Statement	0	0	0	0	0	0
5. Suggestory Formula	0	0	0	0	0	0
6. Preparatory	15	100	7	46.7	4	40
7. Hints	0	46.7	7	46.7	5	50
Supportive Moves						
1. Preparator	4	26.7	0	0	0	0
2. Precommitment	0	0	0	0	0	0
3. Apology	0	0	5	33.3	33	0
4. Grounder	15	100	15	100	10	100
5. Disarmer	1	6.7	0	6.7	0	0
6. Promise of Reward	6	40	32	0	5	50

+dominance -social distance

In Situation 5, all of the native English respondents used Preparatory conditions to request. The most commonly used expressions in this level were mitigated with consultative devices: *Would it be alright to...?* and *Do you think I could..?* Although 47% of nonnative speakers also used Preparatory conditions, again they limited these requests to *Can I...?* even though native Korean speakers used phrases that were comparable to the English consultative forms (*Is it alright to...?*)

Both nonnative English speakers and native Korean speakers were less direct. Nonnative speakers' usage of Hints (47%) is most likely the result of negative transfer since the native Korean speakers also commonly used this level of directness (50%). Most of the Hints seem as though they are simply declarations, and the subjects do not appear to be making requests (*I need to go there/I have to pick my mother up at the airport/I wish to go*). However, it is the responsibility of the requestee (boss) to make a final decision and give his or her approval. Therefore, in essence, these strong hints act as requests.

How, then, does this situation differ from Situation 1 (Asking a Professor for an Extension)? Even though the requestees in both situations have authority over the requester, why do the requesters use Hints in Situation 5 but not in Situation 1? To answer this question, the researcher asked one native English speaker and one native Korean speaker which situation placed more of an imposition on the requestee. Both informants agreed that more of an imposition was placed on the boss rather than the professor. Therefore, it can be assumed that Korean speakers in both groups used Hints to be less direct and more polite. However, in the United States,

Table 6
Situation 6: Baby-sitting

Directness Levels	Native English		Non-native English		Native Korean	
	N	%	N	%	N	%
1. Mood Derivable	1	6.7	9	60	6	60
2. Performative	0	0	0	0	0	0
3. Locution Derivable	4	26.7	20	0	0	0
4. Want Statement	0	0	0	0	0	0
5. Suggestory Formula	1	6.7		20	2	20
6. Preparatory	2	13.3	0	0	2	20
7. Hints	7	46.7	0	0	0	0
Supportive Moves						
1. Preparator	0	0	0	0	0	0
2. Precommitment	0	0	0	0	0	0
3. Apology	0	0	0	0	0	0
4. Grounder	14	93.3	4	26.7	5	50
5. Disarmer	0	0	0	0	0	0
6. Promise of Reward	3	20	2	13.3	2	20

+dominance -social distance

stating what one would do, have to do, or hope to do, rather than explicitly asking for permission might seem rude to the requestee. Native English speakers in "Getting Off Work Early" differed from their answer in "Asking a Professor for an Extension" in that they used more consultative devices (mentioned above) when requesting.

Native English and non-native English speakers used the same types of supportive moves as they did in "Asking a Professor an Extension." Neither of the two Korean groups used Preparators before a request whereas 27% of native English speakers used Preparators such as: *I have a request to make./Can I ask you something?* Again, both Korean groups used Apologies before making the request (NNS=33% and NSK=30%). Perhaps nonnative speakers used Apologies because of their lack of Preparator usage. It seems necessary to make a supportive move (Apology or Preparator) before giving justifications (Grounders) and requesting in both native and nonnative English groups in this type of situation.

In native English speaker requests, the spread of directness levels was much more pronounced than it is in both Korean groups in Situation 6. Nonnative English speakers were also much more direct in their requests as baby-sitters; 60% used imperatives (Mood derivable) whereas 47% of native English speakers used the least direct strategy—Hints (*It's time to go to bed.*) Usage of imperatives seems to be transfer induced; 60% of native Korean speakers as well requested at the Mood Derivable level.

All groups used only two supportive moves—Grounders and Promises of rewards. All but one of the native English speakers used Grounders (*Your parents are gonna be really mad at me*). Nonnative speakers and native

Korean speakers used Grounders much less frequently (27% and 50% respectively).

Negative transfer of pragmatic rules from Korean seems to play a major role in both directness level and external modification (Grounders) in this situation. This may be due to the factor of age. The significance of age difference is much more pronounced in Korea than in the United States. Perhaps adults in Korea do not feel a need to be indirect and to mitigate requests with all children. Most native English speakers avoided imperatives, gave justifications, and left room for negotiation when making requests to other people's children. If nonnative speakers use the same strategies as their native Korean counterparts, then a problem might arise in that American children might not be accustomed to such forceful language from their baby-sitter.

Conclusions

In all three language groups, request realizations are determined by the sociopragmatic features of the situational context. However, nonnative speakers deviated from native English speaker norms in some situations due to the effect of the pragmatic rules of Korean.

In analyzing the oral DCT requests of Situation 5 (Getting Off Work Early) and Situation 6 (Baby-sitting), examples of negative transfer in directness levels were found. In requesting to get off work early, nonnative speakers and native Korean speakers were much more indirect—which might seem rude to a native English speaker in this type of situation. In contrast, nonnative speakers were overly direct in asking a child to go to sleep.

Although not quantitatively tested, this study has not indicated an overuse of external modification as claimed by researchers in past studies (Blum-Kulka & Olshtain 1986: 47-61; House & Kasper 1987: 1250-1288). Rather, learners sometimes chose different types of supportive moves according to the situation which might have been a result of negative transfer. Situation 1 (Professor's Office) and Situation 5 (Getting Off Work Early), both requestee=dominant/imposition=high, required the most supportive moves from all three groups. Transfer from Korean might have come into play in nonnative speakers' non-use of Preparators and overuse of Apologies. In Situation 2 (Asking a Friend for Money), both Korean groups used more Grounders to justify their request for money.

A summary of findings concerning Korean learners of English in general is a difficult undertaking because the learners' request realizations in this study were highly variable according to the social context. One can not conclude from this study that Korean ESL learners are generally more direct or indirect or use more or less supportive moves. These findings have merely illustrated certain contexts in which Koreans deviate from native speakers.

Past research has indicated that formal instruction concerning speech acts and the social rules of language use can assist learners in communicating more appropriately in the target language (Olshtain & Cohen 1990: 45-65; Billmyer 1990: 6). Therefore, this type of study not only is useful in supplying teachers and materials developers with native speaker baseline data, but also indicates how and in what situations certain groups deviate from native speaker norms. It should therefore be a major goal to teach of relevant general cultural schemata and to make nonnative learners aware of differences between their own cultural schemata and those of native speakers.

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Appendix A

Request Instrument

You will be asked to read six brief situations. I will play the person you are requesting to. Respond as much as possible as you would in an actual situation. Your responses will be tape recorded. Indicate when you've finished reading.

SITUATION 1:

You have a paper due in one of your classes next week. However, you will be very busy this week and don't have any time to write it. You go to your professor's office to ask for more time to write the paper.

How do you request an extension?

SITUATION 2:

You are at a record store with your best friend. There's a CD you really want to buy, but you don't have any money.

How do you ask your friend to lend you the money?

SITUATION 3:

At a restaurant you order a steak to be well-done. However, the waiter brings a rare steak.

What do you say to the waiter?

SITUATION 4:

You are trying to studying for an exam which will be given tomorrow. However, your neighbor, who is also a student from your school but you've never met, is playing music very loudly, and you can't concentrate. The library is closed, and there is no other place to study but in your apartment.

What do you say to your neighbor?

SITUATION 5:

Your mother will be visiting from out of town, and you want to pick her up at the airport. However, her flight arrives at 3:00 PM, but you have to work until 5:00 PM.

How do you ask you boss to let you out of work early?

SITUATION 6:

You are baby-sitting a four year old boy. He has been very energetic all night. You want him to go to sleep because you are tired, and it is one hour past his bedtime.

What do you say to the boy?

Can negotiation provide a context for learning syntax in a second language?

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Evidence from a growing number of studies has revealed that linguistic modification occurs during negotiation. No research has yet examined whether such modifications assist the learning of syntax in a second language (L2). The present study asks if negotiation can aid one process in the learning of L2 syntax known as syntacticization. The three research questions addressed were: (1) To what extent are linguistic modifications during negotiation evidence of syntacticization? (2) To what extent do different negotiation moves affect syntacticization? and (3) To what extent does negotiation affect syntacticization over time? Evidence suggests that negotiation would integrate and intensify certain key processes in L2 learning and that these would have an impact on syntacticization over time. Experimental/control treatments were contained within ten sessions as 19 L2 learners participated in communication tasks with native speakers through a computerized writing conference. Results indicated that negotiation could stimulate syntacticization and sustain the process over time. However, comparisons with one control group showed that syntacticization was independent of the type of treatment given.

This paper[1] will report a study that was part of a larger research project investigating the extent to which a type of social interaction known as negotiation could assist the learning of syntax in a second language (L2). The study focused on two constructs that originated from very different fields: negotiation and syntacticization. Negotiation was developed in ethnomethodology, conversation analysis, and interactional sociolinguistics (Garfinkel 1967; Goffman 1967; Gumperz 1982) and subsequently introduced to the field of second language acquisition (SLA) (Hatch 1978a, 1978b; Long 1981). Syntacticization, however, was developed in the field of typological linguistics (Givon 1979a, 1979b, 1981), related to grammaticalization (Meillet 1912; Traugott & Konig, 1991), and more recently introduced to second language acquisition (SLA) (Sato 1986; Perdue & Klein 1992).

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[1] This article is a revised edition of a paper presented at the Second Language Research Forum, Cornell University, Ithaca, NY, October 1995.

This article will first define negotiation and syntacticization and also provide the theoretical and empirical background for the current study. After that, it will present the research questions and their respective hypotheses and describe the methodology that was used to address these questions. Next, the article will report the findings and then consider a few issues that were raised. Finally, the limitations of the study and several directions for future research will be discussed.

The construct of negotiation is defined as a learning process whereby: (a) The even flow of communication is interrupted as a result of real or anticipated difficulties of comprehension. Such problems could range from minor losses in clarity to complete breakdowns in communication; (b) Interlocutors collaborate in order to repair comprehension difficulties through a variety of interactional adjustments such as comprehension checks (*Do you understand?*), clarification requests (*What? Sorry?*), and confirmation checks (*Did you say apple?*).

Syntacticization is defined as a process of language change whereby morphosyntactic devices in an L2 increase over time and reliance on discourse-pragmatic context declines. This is a slight departure from the way syntacticization has been seen in creole studies (Sankoff 1972). These studies had conceived the process in terms of taking a particle that previously had morphological means becoming a syntactic function word. According to both definitions, syntax emerges from discourse (Givon 1979a, 1979b; Sato 1986) so that, for example, L2 learners will rely less on topic-comment and more on subject-predicate structures in their communication. To illustrate this, L2 learners would shift from utterances like *Philly it nice place-* to *Philly is a nice place,* (topic-comment to subject predicate) and from *She go store and she rich-* to *She go store because she rich* (loose coordination to tight subordination). In the next section, we turn to the theoretical and empirical motivations for this research.

Theoretical and Empirical Background

The theoretical motivation for the current study came from the view that negotiation could provide a context for key processes in language learning that would fuel the acquisition process (Pica 1994). Specifically, negotiation was believed to provide learners with opportunities for comprehensible input (Krashen 1981; Long 1981), modified output (Swain 1985, 1993, 1994), focus on form (Long 1992; Rutherford & Sharwood Smith, 1988, 1990; Schmidt & Frota 1986), and feedback (Schachter 1983, 1984, 1986, 1991; Lightbown & Spada 1990; White 1991). All of the above have been argued to be important processes for L2 learning. Given that negotiation can integrate these processes and provide them in a heightened form, I argue that negotiation will lead to general interlanguage change and provide a heightened form of syntacticization.

The empirical motivation for the study came from a re-analysis of negotiation and syntacticization studies. The re-analysis of negotiation studies provided some evidence that the linguistic modifications during negotiation of meaning could be regarded as a type of syntacticization, i.e., manipulation of interlanguage syntax. The re-analysis of syntacticization studies revealed the potential role that negotiation could have in assisting syntacticization. Both examinations suggested a role for negotiation in L2 learning that had hitherto been unexplored in the field of SLA. A few extracts from these re analyses are shown below.

Data from Long's (1981) study revealed that native speakers (NSs) could provide a type of input that had been syntacticized for L2 learners. An example of this is shown in (1):

(1)
NS: Do you wanna hamburger? [trigger]
NNS: Uh? [signal]
NS: What do you wanna eat? [response]
NNS: Oh! Yeah, hamburger [closure]

Example (1) shows that the NNS was given an alternative way to encode the L2. The DO + SVO structure of the trigger was modified to a Wh- + Sub/Aux inversion structure in the NS's response. Varonis and Gass (1988) provide evidence that NNSs can provide syntacticized input to each other, as shown in example (2):

(2)
NNSa: He stands up? He stands, you mean? He stands up? [trigger]
NNSb: He stand. He is standing and— [signal]
NNSa: He is standing [response]

In this case (2), NNSb provided a syntacticized version of her own utterance (*He stand. He is standing and*) which NNSa then incorporated (*He is standing*). In other words, NNSb's self-modification led to a syntacticized change in NNSa's original utterance, i.e., from present simple to present progressive tense. In another negotiation study, Pica, Holliday, Lewis and Morgenthaler (1989) reveal that learners may be given data not only about lexical or semantic features of an L2 but also about L2 structures. This could be valuable in building their interlanguage:

(3)
NNS: Children they visit their uncle few days. [trigger]
NS: Their uncle has the children? [signal]
NNS: Their uncle has the children for a few days. [response]

In example (3), the NNS is shown that *uncle* and *children* could function in either subject or object position in a sentence.

Re-analysis of data from a negotiation perspective not only revealed that syntacticization occurred but also suggested how the process might be assisted, something that was accounted for unsatisfactorily in previous work (Perdue & Klein 1992; Traugott & Konig 1991). Negotiation may play an important role in syntacticization because it can make L2 forms salient to learners and therefore more easily acquired. Pica, Young, and Doughty (1987) have demonstrated how repetition and rephrasal occur in negotiation. Data from Sato's (1986) study of syntacticization over a ten-month period showed how a NS could repeat and rephrase a NNS's utterances as a syntacticized rather than a paratactic form.

In the next section, the research questions are described and their respective hypotheses are outlined.

Research Questions

This study addressed three research questions:

> To what extent are linguistic modifications during negotiation evidence of syntacticization?
>
> To what extent is there a differential effect for different types of negotiation moves on syntacticization?
>
> To what extent does negotiation assist syntacticization over time?

To what extent are linguistic modifications during negotiation evidence of syntacticization?

The first research question arose from studies that have demonstrated, almost incidentally, that linguistic as well as interactional modifications occur during negotiation. The argument to be made here is that these linguistic modifications (the addition, deletion, and substitution of morphosyntactic features) could be considered a type of syntacticization. Some of the studies revealed that a heightened form of syntacticization is available in the context of comprehensible input (Long 1981; Long & Porter 1985; Pica 1987a; Pica & Doughty 1985a, 1985b; Pica, Young & Doughty 1987; Varonis & Gass 1988; Loschky 1994), and others in the context of comprehensible output (Swain 1985, 1993, 1994; Pica, Holliday, Lewis & Morgenthaler 1989).

In order to address this question, the following hypothesis was formulated:

Hypothesis 1: Learners who negotiated would manipulate interlanguage syntax, i.e., syntacticize.

The first hypothesis was motivated by a re-analysis of data from negotiation studies (Butterworth 1972; Brunak, Fain & Villoria 1976) demonstrating that NSs provide syntacticized models of NNS messages, and that NNSs syntacticized their own messages in response to NS signals. In addition, data from syntacticization studies reveal a potential role for negotiation in enabling learners to syntacticize (Sato 1986; Perdue & Klein 1992; Ramat 1992).

To what extent is there a differential effect for different types of negotiation moves on syntacticization?

The second research question arose from Swain's (1985) argument that certain negotiation moves were more likely to push learners to modify their interlanguage than others. For example, certain moves such as clarification requests (*What? Huh?*), signaled a problem in interaction yet supplied no (accurate) alternatives; in this way, learners were forced to modify their initial messages. Other moves, such as confirmation checks (*The boy went to the store?*), would be less likely to encourage learners to modify their messages because the NS provides an L2 model of original message in the form of a yes-no question. The following hypothesis was formulated to address this question:

> *Hypothesis 2: Learners who were given clarification requests as negotiation signals would manipulate their interlanguage syntax, i.e., syntacticize, more than those who were given signals through confirmation checks.*

Hypothesis 2 was motivated by data from Pica (1987b), Pica, Holliday, Lewis and Morgenthaler (1989) and Nobuyoshi and Ellis (1993). These studies provided evidence suggesting that clarification requests led to more manipulation of learners' interlanguage than did other types of negotiation moves. Therefore, it was predicted that learners who were given clarification requests as negotiation signals would add, delete, and substitute their interlanguage syntax more than those who had been given confirmation checks.

To what extent does negotiation assist syntacticization over time?

The third research question was based on the view that negotiation provides a heightened type of comprehensible input, modified output, focus on form, and feedback, all of which have been claimed as vital for interlanguage change and L2 learning (Krashen 1981; Long 1981; Swain 1985, 1993, 1994; Long 1992; Rutherford & Sharwood Smith 1988; Schmidt 1990; Schmidt & Frota 1986; Schachter 1983, 1984, 1986, 1991; Lightbown & Spada 1990; White 1991). The argument to be made here was that negotiation, therefore, should be able to assist syntacticization as one part of the L2 learning process. To address this question, the following hypotheses were advanced:

> *Hypothesis 3a: Learners who manipulated their interlanguage syntax, i.e., syntacticized, during negotiation would continue to syntacticize over time.*

Hypothesis 3a was motivated by evidence from Day and Shapson (1991) and Lightbown and Spada (1990) that immediate posttest gains by experimental treatment groups had held over time as measured by delayed posttests. Learners in the experimental groups had participated in activities similar to negotiation and had outperformed the control groups on both immediate and delayed posttests. In addition, data from several negotiation studies suggested that gains from negotiation would hold over time (Nobuyoshi & Ellis 1993; Doughty 1992; Varonis & Gass 1994).

Subject's Pictures:

FIXED		FIXED			FIXED
	LOOSE		LOOSE	LOOSE	

Researcher's Pictures:

	FIXED		FIXED	FIXED	
LOOSE		LOOSE			LOOSE

Figure 1. Distribution of Fixed and Loose Pictures Between Subject and Researcher

Hypothesis 3b: Learners who manipulate their interlanguage syntax, i.e., syntacticized, during negotiation will syntacticize over time more than learners who were denied opportunities for negotiation.

Hypothesis 3b was based upon the view that negotiation could provide a heightened type of key processes in L2 learning and that the presence of these in negotiation would enable negotiators to syntacticize more over time than other learners (Krashen 1981; Long 1981; Swain 1985, 1993, 1994; Long 1992; Rutherford & Sharwood Smith 1988; Schmidt 1990; Schmidt & Frota 1986; Schachter 1983, 1984, 1986, 1991; Lightbown & Spada 1990; White 1991).

Methodology

The data was collected between November 1993 and June 1994 at a university with the assistance of six trained research assistants. An experimental pretest, posttest, delayed posttest design was used for the study. Researchers met one-on-one with each subject in the study for a period of approximately three to four weeks. Each session with the researcher was one hour in length and was held in a university computer laboratory. This resulted in a total corpus of 285 hours.

There were 19 subjects in the study, 10 males and 9 females, with an age range of 18 to 47. The first language backgrounds were Korean (12) and Japanese (7). All were college educated adults and had received EFL instruction for a range of 2-14 years prior to the study. The subjects were enrolled as ESL students at the English Language Program and placed in low-intermediate level classes. Their Michigan Placement Test scores ranged from 18 to 62.

Each student took a battery of a pretest, posttest and delayed posttests as shown below. These tests targeted tense and aspect and had been revised on the basis of results from an earlier pilot study. Although the time period between the pretest and posttest was only three weeks, it was believed that reordering the sequence of the tests would reduce possible practice effects. The delayed posttest was administered one week after the posttest.

Pretest:
1.Grammaticality Judgment (written)
2.Free Writing
3.Sentence Combination
4.Cloze (written)
5.Grammaticality Judgment (listening)
6.Sentence Imitation
7.Oral Interview

Posttest:
1. Free Writing
2. Grammaticality Judgment (listening)
3. Grammaticality Judgment (written)
4. Oral Interview
5. Sentence Imitation
6. Cloze (written)
7. Sentence Combination

Delayed Posttest:
1. Free Writing
2. Cloze
3. Oral Interview
4. Grammaticality Judgment (listening)

The typing instructor program for Macintosh SE/30 computers enabled the subjects to increase their typing speed and accuracy. Subjects were required to reach 15 w.p.m. for participation in the study. The Aspects 1.03 Program is a writing conference software package with a 'Chat Box' feature that allows participants to type messages to each other. A record of the interaction is displayed on the computer screen, and messages are instantly available to the interlocutor as soon as a participant hits the return key. Subjects were introduced to the 'Chat Box' feature in a discussion of hobbies and interests with a researcher. After the subjects were familiar with this type of interaction, the researcher introduced them to a practice task ,'The surprise visitor,' a two-way jigsaw task that had been developed in previous negotiation research (Pica, Lincoln-Porter, Paninos, & Linnell 1995). Both participants were divided by a screen and could not communicate with each other visually or orally. The task involved the retelling of a picture story and required collaboration on the part of both participants because each had a unique distribution of pictures as shown in Figure 1.

The tasks were primed for past tense with prompts such as "This is a story about a dragon that happened a long time ago." The researcher also reviewed potentially difficult lexical items prior to completion of the task.

Subjects were randomly assigned to four groups:

Group 1: Clarifiers (n = 5) - negotiation via clarification requests

Group 2: Confirmers (n=5) - negotiation via confirmation checks

Group 3: Interactors (n=5) - interaction without negotiation

Group 4: Gamers (n=4) - no interaction/negotiation (computer games only)

The Clarifiers were given negotiation only through clarification requests and the Confirmers only through confirmation checks. The Interactors were denied any opportunities to negotiate and the Gamers were denied opportunities for either interaction or negotiation, as they engaged in computer

(i) Clarifiers:

Learner:	*Researcher:*
The little boy goed home (trigger)	
	what? (clarification request signal)
The little boy going home (response)	
	Ok. So in the next event his father cooked some dinner (continuation move)

(ii) Confirmers:

Learner:	*Researcher:*
the little boy was wait for dog (trigger)	
	he was waiting for the dog? (confirmation check/signal)
yes (response)	
	Ok. So then the dog ran away. (continuation move)

(iii) Interactors:

Learner:	*Researcher:*
The dragon came fly down to earth	
	She started to look for some food
(trigger) what? (signal)	
	It doesn't matter. (denial of negotiation) here were some people in the village nearby. (continuation with narrative regardless)
The people liked dragon (continuation of narrative)	

(iv) Gamers: only participated in computer games during the treatment period, e.g., PhraseCraze, Hangman, Wheel of Fortune, etc.

Figure 2. Examples of Negotiation.

games throughout the time period. Examples of the treatment given for each group are given in Figure 2.

This data was coded using a framework for negotiation developed by Pica, Holliday, Lewis, Berducci, and Newman (1991) and by a framework designed specifically for the present study for syntacticization. The latter framework targeted the addition, deletion, and substitution of

Table 1. Summary of Findings: Research Questions, hypotheses, and Results

Research Questions and Hypotheses	Results
1. To what extent are linguistic modifications during negotiation evidence of syntacticization?	
Learners who negotiate will manipulate their interlanguage syntax, i.e. , they will syntacticize	**Supported**: Mean syntacticized response = 0.21.
2. To what extent is there a differential effect for different types of negotiation moves on syntacticization?	
Learners who are given clarification requests as negotiation signals will manipulate their interlanguage syntax, i.e., they will syntacticize more than those who are given signals through confirmation checks	**Supported**: Mean syntacticized response =0.30 (Clarifiers) vs. 0.12 (Confirmers). t--value = 3.90, d.f. = 8, significant at $p < 0.05$. **Rejected**: Mean Syntacticized T-units = 0.83 (Clarifiers) vs. 0.86 (Confirmers). t-value = 0.84, d.f. = 8, not significant at $p < 0.05$
3. To what extent does negotiation assist syntacticization over time?	
a. Learners who manipulate their interlanguage syntax , i.e., syntacticize, during negotiation will continue to syntacticize over time	**Supported** in Syntacticized responses over Times 2, 4, 6, & 8: F = 0.63, d.f. = 3, not significant at $p < 0.05$
b. Learners who manipulate their interlanguage syntax, i.e., syntacticize, during negotiation will syntacticize over time more than learners who are denied opportunities for negotiation	(i) **Rejected** in Syntacticized T-units over Times 2, 4, 6, & 8: Negotiators F=0.41, d.f =3. Interactors: F=1.23, d.f.=3. Both not significant at $p < 0.05$ (ii) **Rejected** in Instances of syntacticization per T-unit over Times 2, 4, 6, & 8: Negotiators: F = 0.68, d.f. = 3. Interactors: F = 1.63, d.f. 3. Both not significant at $p < 0.05$ (iii) **Rejected** in Clauses per T-unit over Times 2, 4, 6, & 8: Negotiators:F = 2.54, d.f. = 3. Interactors: F = 0.57, d.f. = 3. Both not significant at $p < 0.05$

morphosyntactic features such as verb and noun morphology, subordination, passivization, and gerundivization. For example, in the addition of verb morphology a learner could initially type *Gabrielle ride Philadelphia,* then researcher would signal with *What?*, and the learner might respond with an example of the deletion of subordination which could occur as: *Gabrielle rode to Philadelphia because she was excited* (Learner) —> *What?* (Researcher) --->*Gabrielle rode to Philadelphia. She was excited* (Learner).

Results

From Table1, we can see that the first research question (To what extent are linguistic modifications during negotiation evidence of syntacticization?) was answered in the affirmative. When syntacticized responses to the researcher's signals were examined, it was found that the mean syntacticized response was 0.2136 (approximately one fifth of all responses). For a response to be syntacticized, it was not necessary for the learner to produce an accurate L2 response. It was critical, however, that the response modified the trigger through the addition, deletion, or substitution of specific morphosyntactic features. Examples of how negotiation could assist syntacticization are given below. The bolded words are provided for clarity and were not bolded in the original transcripts.

(4)
NNS: **boat was moving and banp**
NS: sorry?
NNS: boat is up and doun and wave on water and banping
(From: Task 8 'Storm')

(5)
NNS: The wave to push a ship so the ship moved a lot
NS: sorry?
NNS: The ship very moved because the wave push to the ship
(From: Task 8 'Storm')

In example (4), the learner added *-ing* to the verb *banp* (possibly 'bump') in response to the researcher's request for clarification over an action occurring in the past (past progressive). In example (5), the learner manipulated subordinate and infinitive structures rather than verb morphology. The learner added a subordinate clause (*because the wave push to the ship*) in response to the researcher's signal (*sorry?*) in order to clarify the original trigger message. Furthermore, the learner switched the order of an infinitive verb from the trigger (*to push*) to the response (*push to*) resulting in the deletion of the infinitive.

The second research question (To what extent is there a differential effect for different types of negotiation moves on syntacticization?) was also answered in the affirmative. The hypothesis that learners who were given

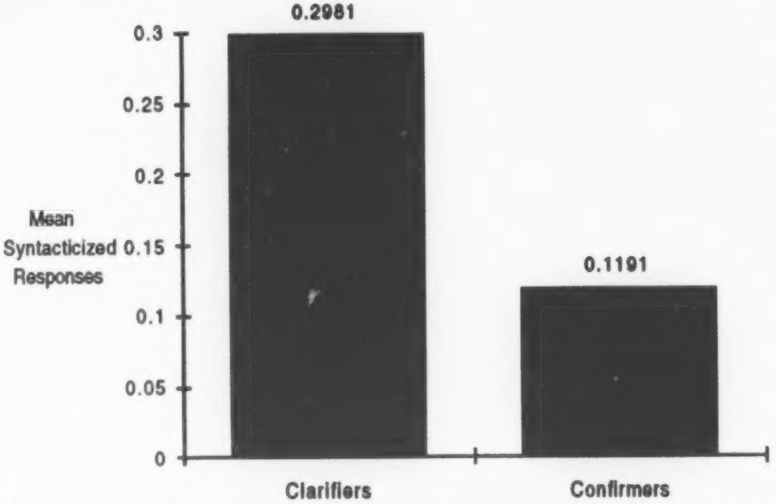

Figure 3. Comparison of Mean Syntacticized Responses by Clarifiers (N = 5) versus Confirmers (N = 5). This was significant at the $p < 0.05$ level.

clarification requests as negotiation signals would syntacticize more than those who were given signals through confirmation checks was supported, as shown in Figure 3.

From Figure 3, we can see that the Clarifiers syntacticized at almost three times the mean of the Confirmers. The following two examples show how Confirmers frequently behaved when they were given the researcher's signal.

(6)
NNS: **And the boy planted many carot seed**
and the carrot grow up
NS: many carrot seeds?
NNS: yes
NS: Let's move on
(From: Task 1 'Carrot Seed')

(7)
NNS: Girl didn't looking for her class.
Girl keep look her paper.
NS: Didn't look for her class?
NNS: Yes, that girl continually stand on the aile
NS: stood on the aisle?
NNS: Yes, stood on the aisle
NS: Ok
(From: Task 6 'School')

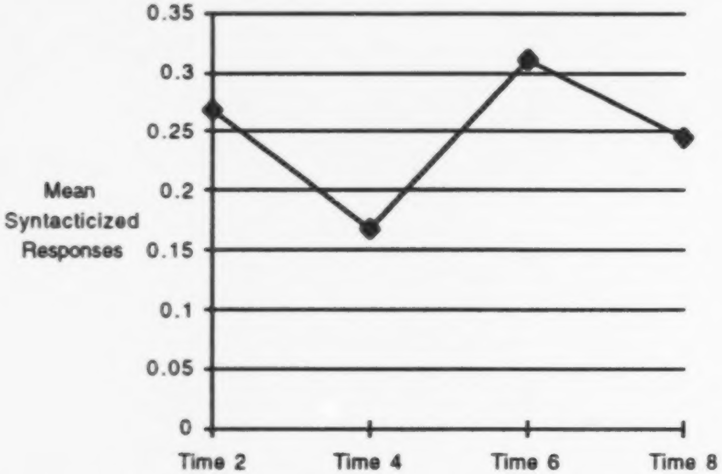

Figure 4. Mean Syntacticized Responses Over Time Periods 2, 4, 6 & 8 by Negotiators (N =10)

Example (6) shows that the researcher provided a syntacticized model to the learner of the trigger message by adding plural -s to a countable noun (*seed*). The learner acknowledged this in her response (*yes*), but did not modify the trigger herself. In example (7), the researcher's syntacticized model (*didn't look*) of the learner's trigger (*didn't looking*) was acknowledged (*yes*), but the learner did not manipulate her interlanguage syntax. In the next exchange, however, the learner did syntacticize her message in response to the researcher's signal (*stand —> stood*).

The third research question (To what extent does negotiation assist syntacticization over time?) was addressed with two hypotheses. Hypothesis 3a (Learners who manipulated their interlanguage syntax, i.e., syntacticized, during negotiation would continue to syntacticize over time) was supported. Figure 4 displays syntacticized responses over four time periods. Due to higher absenteeism by the learners on certain days, there was insufficient data to report for every time period. The Clarifiers and the Confirmers were combined into one group for this hypothesis (henceforth, the Negotiators).

From Figure 4, it is clear that the Negotiators proceeded in a stepwise fashion over time. Although they appeared to regress at Times 4 and 8, there was evidence of improvement at Time 6 and possibly at Time 10 as well. This type of variability is consistent with other SLA research on interlanguage development (Sharwood Smith & Kellerman 1989). Tests from an ANOVA showed no statistical significance for any time period. Therefore, we could say that learners continued to syntacticize at the level they began with. There was no significant change, either to increase or decrease syntacticization. Hypothesis 3a was thereby supported.

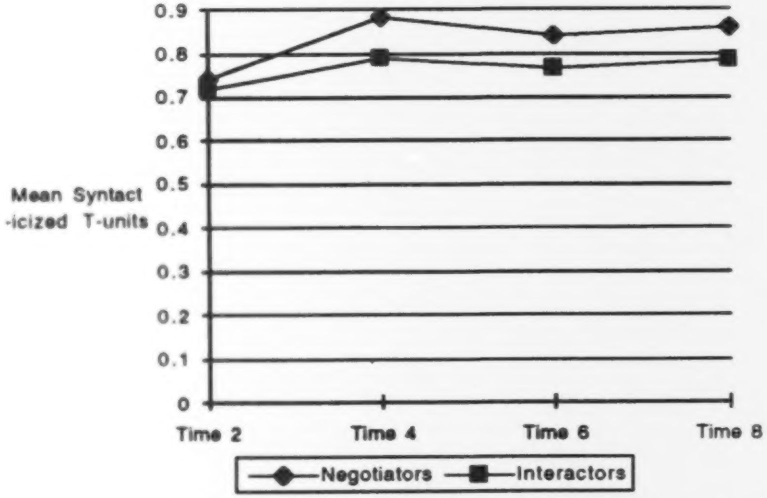

Figure 5. Comparison of Mean Syntacticized T-units by Negotiators (N =10) vs. Interactors (N =5)

This finding raised the question: Would the Interactors do as well as the Negotiators in syntacticizing over time? Hypothesis 3b had predicted that the Negotiators would syntacticize more over time than the Interactors. Mean syntacticized T-units were compared for both groups over time. The entire transcripts for the Negotiators and the Interactors were coded for evidence of syntacticization. T-units, one clause plus any attached or embedded subordinate clauses (Hunt 1970), were selected as an appropriate written unit of analysis, as they would reveal learners' abilities to consolidate more information within one grammatical unit by shifting from simple juxtaposition or loose coordination to subordination. Figure 5 displays the results of a comparison of syntacticized T-units by the Negotiators and the Interactors over time.

Figure 5 shows that both groups began at a similar level (about 0.7) but the Negotiators outsyntacticized Interactors at Times 4, 6, 8. Both groups followed a similar pattern: rising to Time 4, declining to Time 6, and rising slightly to Time 8. An ANOVA revealed no significant difference between the groups. Negotiators were not better than the Interactors at syntacticizing over time. The analysis was broadened with a comparison of both groups in terms of the mean instances of syntacticization per T-unit over time. Results of this analysis are reported in Figure 6.

From Figure 6, we can observe that the Interactors began at a slightly higher level than the Negotiators (1.0 vs. 0.9), but the Negotiators caught up by Time 6 (both approximately 1.1). The Negotiators peaked sooner than the Interactors (Time 6 vs. Time 8) and appeared to have a flatter profile overall than the Interactors. An ANOVA revealed no statistical differ-

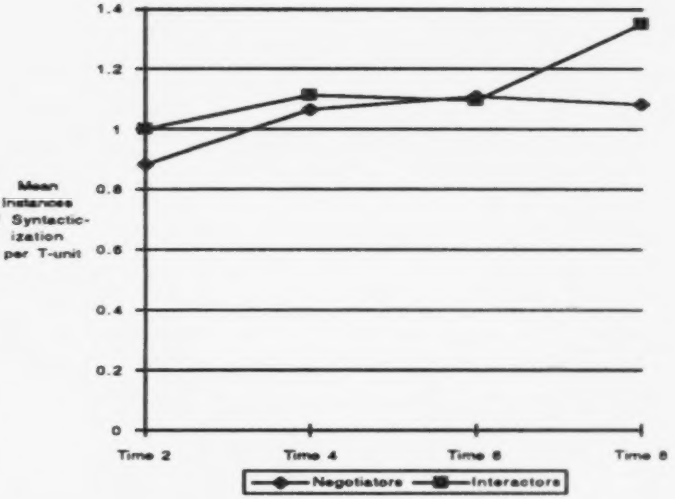

Figure 6. Comparison of Mean Instances of Syntacticization per T-unit over Time for Negotiators (N = 10) versus Interactors (N = 5)

ence between the groups over time. Syntacticization appeared to continue regardless of the type of discourse learners engaged in.

When group gain scores from the pretests to the posttests and delayed posttests were analyzed, no significant differences were obtained between the Clarifiers, Confirmers, Interactors or Gamers (see Figure 2). The tests had targeted tense and aspect, partly because the jigsaw tasks were primed for these structures and partly because tense and aspect figure so prominently in syntacticization. The results demonstrated that the experimental treatment had no immediate or delayed impact on learners' knowledge of tense and aspect. In the following section, we turn to several issues that were raised by these findings.

Discussion

In her work on SLA, Sato (1986) found limited evidence for syntacticization. Her learners had low frequencies of inflectional past tense verbs (*smashed*), more lexical past tense (*brought*) and adverbials (*yesterday*), some evidence of shifting from loosely coordinated propositions to subordinated propositions, but an absence of infinitival complements (*he wanted to go to the store*) and a near absence of relative clauses (*its about a boy who likes stories*) and gerundive complements (*he taught us about using computers*) Results from the present study, however, revealed that negotiation could assist syntacticization within a relatively short period of time and that a variety of syntacticized features were evident. In other words, there was evidence that syntacticization had occurred not only in terms of

Table 2. Postulated Intermediate Processes Within Syntacticization

Process *Level 1:*	Description	Example
Baso-syntactic	zero—>first syntax (word order)	(1)*pot break she* —> (2)*she break pot*
Level 2:		
Meso-syntactic	any syntax—>any other syntax (WO—>morph)	(3)*she pot breaked*—> (4)*she broke pot* —> (5)*she broked pot*
Level 3:		
Acro-syntactic	syntax 1—>syntax 1+ (morph—>adverb)	(6)*she broke pot cried* —> (7)*after she broke pot, she cried*

Note: —> indicates 'changes to'.

verb and noun morphology but also for subordinate, infinitival, and passive structures. What might account for this discrepancy?

We could argue that because negotiation was more intensive and more available under the specified experimental conditions, learners were more likely to syntacticize than under naturalistic conditions when negotiation is far less frequent. This line of reasoning might be sufficient were it not for the fact that Sato's learners were at a lower level of proficiency than those in the present study. Therefore, a more profitable explanation might lie in Sato's own critique of Givon's original framework in which she suggested that syntacticization, although not necessarily a smooth linear process, might proceed through a series of intermediate stages. If true, this could account for the apparent disparity in results between Sato's study and the present research, as her learners were at the beginner rather than intermediate level. Table 2.0 displays postulated intermediate processes within syntacticization.

As shown in Table 2, three stages were postulated for syntacticization. The baso-syntactic would entail a shift from zero to first syntax, the meso-syntactic from any syntax to any other syntax, and the acro-syntactic from syntax 1 to syntax 1+. Stages might overlap to some extent as learners progressively syntacticized their interlanguage. Table 3.0 shows some examples from further analysis of the data based upon intermediate stages of syntacticization.

When the data was re-analyzed, no cases of baso-syntactic change were found, but there were 57 cases out of 79 that were meso-syntactic (mean 0.7215) and 22 out of 79 that were acro-syntactic (mean 0.2785). The baso-syntactic example in Table 3.0 shows that 3rd -*s* was added to the verb *dig* but subsequently dropped. Word order had already been established in this learner's interlanguage. In the acro-syntactic example, *becaus* was added in response to a signal (*I do not understand*). Here the learner moved the independent clause in the trigger to a dependent clause in the response.

Note also that a meso-syntactic process occurred simultaneously as *was sapray* was modified to *sapraing*. On the basis of this postulated description, then, we might argue that Sato's subjects were probably at the baso-syntactic level and those in the present study were predominantly at the meso-syntactic level. Learners at the baso-syntactic level would probably require greater amounts of comprehensible input due to their limited L2 resources, but those at the meso-syntactic level would need more negotiation in order to manipulate their increasing L2 resources. We could hypothesize that learners at the acro-syntactic level might need greater correction to ensure more accurate use of their fairly developed L2 repertoire.

A second issue that was raised by the current research was the relationship between syntacticization and L2 development. This study showed that negotiation could stimulate and continue syntacticization over time, but appeared to have no observable impact on knowledge of tense and aspect (as shown by lack of significant difference in gain scores between groups on pre/posttests). Does that mean syntacticized changes require more time or perhaps different types of discourse to impact interlanguage systems?

Although data from the present study might suggest that negotiation was inadequate to make a significant impact, such a view is premature. It remains arguable that negotiation made impact on syntacticization and that it could affect L2 development; however, there are three reasons why this was not evident in the data. First, the validity of the tests used in the study was somewhat limited. The tests targeted only tense and aspect, but a broad range of syntacticized structures were evident in negotiations (relative clauses, prepositions, possessives, Q types , etc.). Only 15.04% of negotiations were over tense and aspect; therefore, 84.96% of negotiations were over other forms (lexical, other structural).

Second, SLA research has shown that interlanguage change may not necessarily follow a linear path (Meisel, Clahsen, & Pienemann 1981). Klein (1986) has argued that interlanguage change might be irregular as the pressure to analyze an L2 and to synthesize it into a learner's interlanguage system might vary considerably. According to another viewpoint, it is conceivable that unanalyzed chunks from the L2 could serve as input for learners' developing interlanguage systems later on (Lightbown 1994).

Several recent empirical studies have found that reprocessed interlanguage could indeed be maintained over time. In a study of ESL learners, Oliver (1994) found that learners incorporated only ten percent of recasts by NSs because (a) NSs continued the conversation, thereby denying the NNS any opportunities for incorporation, and (b) learners were given yes-no questions which, again, had the effect of denying them opportunities for interlanguage manipulation. Her findings suggest that with more opportunities to manipulate interlanguage within conversations learners would probably incorporate more.

Swain (1994) cites two studies that also provide evidence for the view that learners who manipulate their interlanguage could benefit over the

Table 3.. Examples of Subprocesses of Syntacticization

Sub-process	Learner	Researcher
Meso-Syntactic	*Task: 'Carrot Seed Story'*	
	he dig the carrot plant up and he is the carrot is bring hand car	
		Please explain what you mean
	he digs the carrot plant up and the carrot separated the bruch	
		what?
	he dig up the soil and put the carrot plant out the ground	
		ok
Acro-Syntactic	*Task: 'Baseball Game'*	
	ball is going to elevter	
		I do not understand
	boy and dog was sapray becaus ball was goon	
		sorry?
	ball on the elevter boy looking and sapraing	
		I understand. ok.

long term. La Pierre (1994) studied French L2 in a grade 8 immersion classroom over one month. She found that negotiation over language form led to 80% correct solutions on a test targeted on those structures a week later. Donato (1994) investigated American college students in French L2 classrooms. She observed that after students had engaged in scaffolded discourse 75% of those structures used were produced correctly one week later.

Summary, Limitations, and Future Research

This article has reported the results of an experimental study designed to investigate the potential role of one type of social interaction in the process of syntacticization. The major findings are that negotiation could provide a context for syntax learning in an L2 and that it could continue to do so over time. However, negotiation was no better at this than was social interaction where opportunities for negotiation were denied. Also, negotiation made no observable impact on learners knowledge of tense and aspect over the duration of the study. When different types of negotiation moves were examined, it was found that clarification requests were more effective than confirmation checks in assisting syntacticization in short periods of time but that over longer stretches this effect was annulled.

Future research could examine the impact of a variety of types of discourse at low, intermediate, advanced levels on syntacticization. The effectiveness of negotiation versus correction could be investigated, for example, in relation to longitudinal syntacticized change. Another area for work, as mentioned above, is in the development of tasks that are structure-focused yet meaningful. Some preliminary work has been accomplished, but a great deal remains to be done (Fotos & Ellis 1991; Mackey 1994, 1995; Loschky & Bley-Vroman 1990). Negotiation has considerable potential for exploring these dimensions of the L2 learning process.

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